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SEPTEMBER 1947
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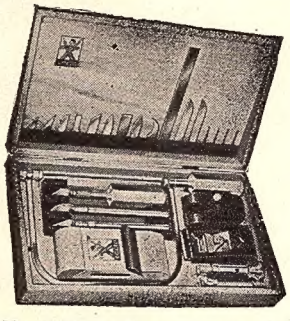

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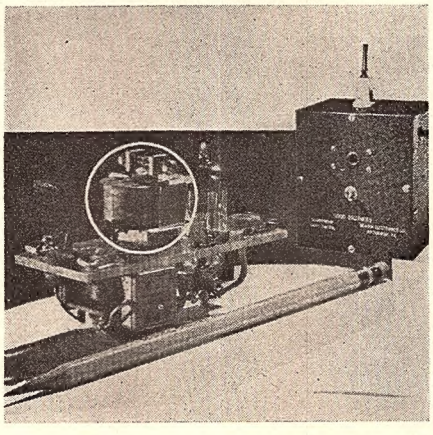

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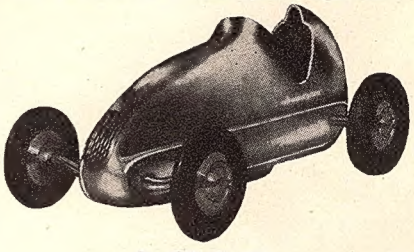

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OLD-FASHIONED TYPE

I am a constant reader of your magazine, not having missed an issue since you began publication. The magazine is fine and I enjoy it very much. . . .

In the railroad section, how about a Palace Poultry Car and an old-time "Gallows" type "armstrong" turntable? A number of plans for turntables have been given but all are of more modern design and it is somewhat disconcerting to see the Podunk Westerns "Flying Hortilla" composed of an old 8-wheeler or mogul type engine, an ancient wooden framed water car, three stock cars, a platform baggage car and a coach of the gay 90's roll into the little cow town of Rump Steak (pop. 75), spot the passenger equipment in front of the depot and while the baggage man unloads two mail pouches, a suit case, a saddle in a tow-sack and 14 cream cans, the rest of the crew spots the three stock cars at the chutes, the water car at the tank spout and takes the engine to the house, an ancient rock structure, turning it on a *modern* 90-ft. turntable, complete with electric mule, the pit being floored and sealed with new and spotless cement!

Rump Steak consisting on an old frame school house (in which dances are held Saturday nights, church service on Sunday, Court proceedings and various other activities at other times; one wayward gent being hanged to the children's swing-frame on the school ground for acquiring a horse under questionable circumstances), a large stone structure containing the Post Office, General Store and Hotel, two saloons, blacksmith shop, barber shop, two or three small adobe dwellings, section house, roundhouse, depot and large stock pens, and where the only concession to modern times has been to install a gas pump at the front of the General Store and to gravel "Main Street"—a modern turntable with an electric mule is just out of place.

Most Southwestern jerk-water railroads resort to a wye, since grazing land sold for two-bits an acre about the time they were built and in many cases land was donated, but a wye being impractical in this case, wouldn't an old armstrong Gallows in a pit having a retaining wall of red sandstone and a well worn path around it where the boys heaved, strained and cussed as it seemed harder to turn every time, look more in character than the modern table previously described?

Also, old Pancho Gonzales at Coyote Wells being our chief poultry shipper and a direct descendant of Pancho Villa and a man of violent temper, it is most distressing to have to advise him we are unable to furnish Palace Poultry cars for his use. Perhaps we'd better ask for an outside framed caboose in order to hang armor-plate on it as we gotta go right by his place!

Where, oh where, is Eric LaNal and also the guy who wrote the Hi-Rail series? They are tops! . . . *J. P. Wingo, Pecos, Texas.*

THE MODEL CRAFTSMAN

RAMSEY NEW JERSEY

Including "THE MODELMAKER"—Est. 1924 and MINIATURE RAILROADING Magazine

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Field Editors: Railroads—L. W. Sagle, H. L. Adams. Race Cars—C. A. Penn.

VOL. 16, NO. 4 SEPTEMBER, 1947

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WHY NO EQUIPMENT?

Your description of the Baker Valve Gear in the June '47 issue was excellent, as was the picture of such a gear as applied to a N. Y. C. Hudson, but why did you have to spoil the article by showing pictures of Mr. Austin's excellent C. & O. Pacific in HO gauge which has a modified Walschaert gear as an example of a modified Baker gear? Incidentally, the original has a Baker gear as have nearly all C. & O. engines.

Mr. Crater is, no doubt, an outstanding model maker whose engines run well, but I wonder if he expects his engineers to drag their feet to stop a train, and his firemen to bring water to the boiler in pails. Where is the equipment, like brake rigging, air, water, steam and sand lines, pumps, injectors, generators, feedwater heaters, valves, that would transform his locos from a tube on wheels to a scale model.

Lest you think I am a dissatisfied reader, let me hasten to add that your articles on tinplate trains by Hertz, machining articles by Blackstaffe, and the general run of articles by Austin on railroads make the advent of your magazine once a month a pleasure to be anticipated. . . . *Charles H. Laramie, Rochester, N. Y.*

JUST DREAMING, BUT . . .

Please mail me a copy of "How to Build a Model Railroad". . . . I'm a beginner so I'll take your word for it as you say this is a "must for beginners". I've been buying M. C. for over two years now and so far have just been dreaming of the time when I would get down to business and start a pike. I've learned a lot just by reading M. C. but one thing I would like to see sometime would be the plans for an eight or ten wheeler N. Y. C. loco in true to scale plans in HO, how about it, or perhaps one of our Canadian Pacific engines, say about 2800 class. . . . *Ed. Wood, Brandon, Man.*

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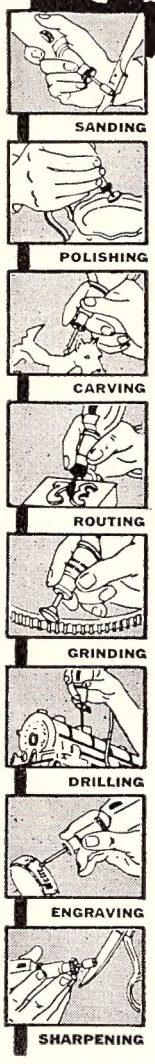

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RAILROAD CLUB NEWS

NORTHEAST NMRA. Under the joint sponsorship of the Worcester Model Railroaders, The Worcester Central Model Railroad Club and the Northboro Model Railroad Club, the Fall Meeting of the Northeastern Region of NMRA will be held in the Heart of the Commonwealth, Worcester, Mass., Oct. 11th & 12th. Headquarters will be at the Sheraton Hotel, registration to start 10:30 A.M. on Oct. 11th. A full schedule of events has been planned, including a tour of the New Haven Terminal and The Pullman-Standard Car Works as well as group trips to the sponsor club layouts (*two HO and one S-gauge, 12-volt D.C., 2-rail*). Don't forget, bring along a *Hog* with you!

Four new Directors will be elected at this meeting, so it is imperative to bring along your N.E.R. membership card. Contact Donald B. Pierce, Chairman of Reservations, for further information.

WEST ENGLEWOOD, N. J. Among the many new HO clubs being formed in New Jersey is the West Shore Model Railroad Club which was organized in January, 1947. Actually the club is an outgrowth of the new O-gauge only Mystic Knights of the Rusty Rail. As the number of HO gaugers increased, it was felt that more could be accomplished by forming into a separate group, especially since the O-gaugers had no layout or space for one. Thus there are now at least four HO clubs in Bergen County (Ridgewood, Rutherford and Hasbrouck Heights are the others; *local fans, take your choice*).

It was decided that membership to the WSMRC should be limited to ten, at least for the time being. With such a small membership, a club owned layout would be much too costly so it was decided to adopt the Mohawk Central Railroad which was started by the O-gaugers. Incidentally, the Knights still drop in once in a while to drink up their beer and pan HO. The boys don't mind the panning, but beer is expensive, at least in quantity.

The layout is somewhat in a "J" shape and is located in a basement measuring 21′ x 23′ and although no definite prototype is being followed, the West Shore Railroad (NYC River Division) does exert an influence. Six-volt power by rectifier is still being used and 12-volt locomotives have been found to run very smoothly on it with but one exception, that being the new Varney MU motor. Since there are already three of these on the roster, conversion to 12 volts will be soon.

One corner of the basement houses a darkroom measuring 6 x 8 ft. A portion of this is used as a small shop where, when completed, it is planned to do much of the construction and assembly work of items needed on a model pike. A projection booth was also built into the darkroom from which are shown 35 mm.

color slides as well as both 8 mm. and 16 mm. film. Obviously most of the film deals with railroads or trolley lines, taken on rail jaunts by the members. In addition to the home movies, local photo supply stores have film libraries and the boys are able to rent such old time thrillers as "Fun in a Pullman" and "Take the Next Car." It is planned to get "Roaring Rails" shortly, the story of the famous Civil War chase.

Officers of the club are Thomas M. Gilbert, Chairman; Henry Zannie, Treasurer, and Harold Carstens, Secretary. Visitors are welcome on Friday nights, 8 P.M., but it is advisable to first telephone to see if "anything's cooking." Phone: TEaneck 7-3154R.

INDIANAPOLIS, IND. The Indianapolis HO Gauge Model Railroad Club is happy to announce the acquisition of a clubroom in the Indianapolis Union Station, space being assigned through the courtesy and cooperation of the Indianapolis Union Railway Co., Mr. W. H. McKitrick, Superintendent. The club is real busy now, planning a layout which will meet the desires of a majority of the members. Their membership roster is up to 35, all 100% NMRA, with several names on the waiting list for membership.

On June 14th, the club had a social evening for members, wives and guests. A fine program of sound-color films, supplied through the courtesy of the N. Y. Central RR and the American Association of Railroads was enjoyed by all. The evening was topped off with an exhibit of expert modeling craftsmanship by Mr. and Mrs. C. M. Carter, railroad games and refreshments. This activity was the result of much hard work on the part of their Program Committee consisting of Melvin Olsen, Dan Shattuck and Cliff Steele.

The Club has been very active, sending a delegation of eight to attend the Pittsburgh meeting of the Mid-Central Region, June 21st & 22nd. A fan trip to the Chicago Museum of Science and Industry Santa Fe model railroad exhibit was made July 13th by 23 members and guests, the round trip being made on NYC's famous James Whitcomb Riley streamliner.

NEW YORK, N. Y. Dressed in cellophane which was gathered up in long flounces and set off at the waist and neckline with ribbons in the latest shade of New Haven green, two brand-new passenger-type marker lights, their red and yellow (*A.A.R. Specifications call it yellow, not amber*) roundels blushing coyly through the shimmering folds of the transparent bodice, proved to be the latest in domestic style creations at their coming-out party when they were presented by the New York, New Haven & Hartford Railroad to the New York Society of Model Engineers at the recent "New Haven Night" meeting of the Society.

Representing the New Haven Railroad, Mr. C. M. Hull, Asst. Vice-President,

(*Continued on page 46*)

TT TIPS

Send 25c for sample track, illustrated circular and price list.

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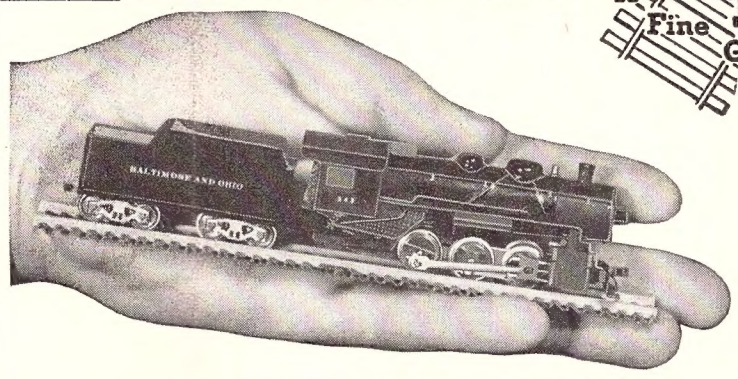

TT GAUGE 0-6-0 SWITCHER
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Ask to see the new "TT" Switcher (0-6-0) shown above. It's just the engine to start with. Cast metal boiler and tender with rivet detail. Precision milled brass frame. All bearings either brass or bronze. Brass drivers and wheels—5 pole Pittman Permanent magnet motor mounted in fire box. Accurately scaled 1/10" to 1 foot. Easy to assemble. Operates on 12 v D. C. TT gauge .471 (approx. 15/32").

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Diesel loco A unit with motor	23.00	28.50
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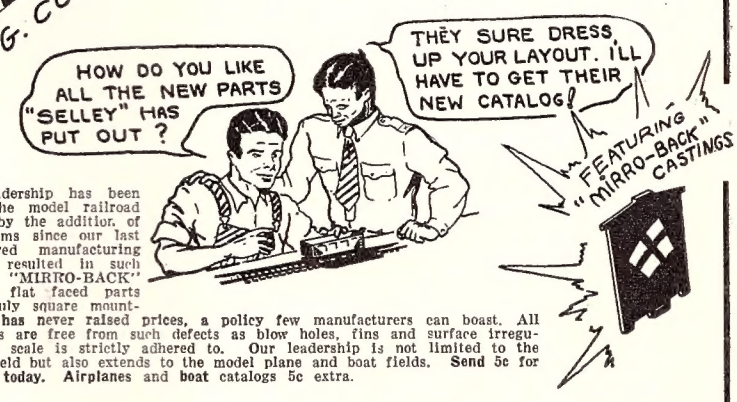
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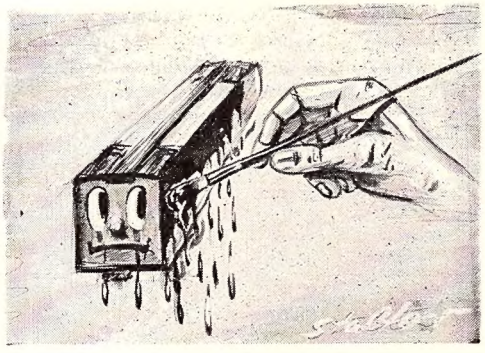


Painting Your Freight and Passenger Equipment Is Easily Done If Proper Techniques Are Used

By L. W. LAWRENCE

HAVE you ever seen a beautiful freight car, the result of many hours of tedious labor in applying exquisite detail, completely ruined by a paint job which is uneven, streaky, gritty and otherwise disfiguring? Well, I have! In the "early days," I turned out a string of cars that were so terrible I just felt like stamping on them. It was then that a resolution was made—a determination to lick the problem! After many trials, and more errors, the following tricks seem to yield the best results.

The finishing of any wooden car actually begins *before* assembly of the wooden parts. Sandpapering, the first essential step, is made easier if the wood is still in flat form. Using 3/0 to 5/0 sandpaper and sanding with the grain in a light, full sweep of the piece of wood, sand until a smooth surface is obtained. Do not expect too great smoothness at this point since almost all wood used in model car kits is of a pulpy nature and cannot be given a really smooth surface. Do not bear down hard on your sanding block as this accomplishes no more than to grind the wood thin without giving smoothness. Always use a sanding block! Sandpaper held in the hand not only causes *waviness* but inhibits the retention of clean, square corners. When using a block, make certain its undersurface is flat. An uneven sanding block is not much better than none at all! A chunk of brass 3" x 2" and 1" thick makes a dandy sanding block because it not only has the desired flat surface but gives about sufficient weight to do a nice job. You need only hold the sandpaper to its sides and slide it back and forth with no additional pressure.

After sanding, filling the wood comes next. Because the ideal model wood is usually an open-grain wood, it drinks up paint as a sponge does water. To overcome this, an application of a paste wood filler is advised. Paste wood fillers are usually a mixture of silicates and turpentine. The paste, as purchased, is mixed with equal portions of turpentine, then applied with a brush by "painting" *against* the grain. After a fifteen minute drying period, the excess is wiped off *across* the grain. After 24 hours, sand lightly with 5/0 sandpaper. A hard, shiny finish should result. Now assemble the wooden body of the kit, but *do not attach* any hardware. Fill in all cracks with plastic wood—*not putty*.

When assembly is complete, your car is ready for its first coat of paint. Using a good model railroad paint, such as Testor's, thin a portion by adding two parts of turpentine to three parts of paint. This should give you a watery solution which we'll use as a primary wash for the assembled body. Using a very soft brush (¼"-½" art brush), apply the wash liberally but evenly. Allow 18 to 24 hours to dry. Again using 5/0 sandpaper, sand the surfaces lightly, dusting with cheese cloth dampened with turpentine. If the surface is not truly hard and smooth, a second or third coat of wash should be applied, sanding down each application when dry. The car is now ready for the *body coat*.

Regardless of what the can says, paint as it comes is invariably too thick for best results. Thick paint is a definite menace because it does not anchor to the surface, but lays as a film on top and soon chips or peels. The only successful method of applying paint is to thin it and use several coats. I have applied up to *seven coats* of paint to a single car body! It may be time consuming, but well worth it.

The body coat to be applied is a mixture of paint and sufficient turpentine to yield a voscosity comparable to that of coffee syrup (*check with your local soda fountain*). Again using a soft flat brush, apply the mixture. When painting the car sides, paint parallel to the scribing. There are two reasons for this. First, you do not fill in the scribing and, second, if brush marks do persist they will be less evident if vertical because of the elimination of relief shadows. When painting the roof, paint from the center out to the side edge. The roof walk will cover any lapping of paint down the center. Be careful of the corners of the car as paint has the habit of flowing and forming droplets along the edges of cars. Watch out, too, for overlapping. If you must stop while painting a surface, stop at a scribe line. This will eliminate obvious overlapping.

When the body coat is dry (*at least 36 hours*), smooth down with fine steel wool, working *across* the scribe lines. Dust thoroughly with clean cheese cloth.

Your car body is now ready for attachment of all hardware. Metal hardware should be degreased before attaching by washing with carbon tetrachloride. An old tooth brush proves handy at this point. If any wooden hardware is used, it should be sanded, filled, wash painted and body painted. It is advisable to give all hardware a coat of body paint before attachment. The completed car is now ready for its finish coat.

The final coat is of the same consistency as the wash coat, and is applied to both the body and hardware following the parallel-to-scribing technique. At least 48 hours should elapse before the car is handled or decals applied, despite the advertised time of 24 hours.

Following the application of decals, a single coat of good flat varnish will protect them as well as the car finish. When varnishing, again follow the scribing. Your car is now ready for service and although the painting took nearly one week to complete, the satisfaction of seeing your workmanship enhanced by a lustrous finish makes the labor well worth while.

Finishing a metal car presents a slightly different problem as we have a smooth, hard surface at the very start. Most cars having metal sides and ends still use a wooden roof which should be finished as just described. If wooden supporting is used under the metal, it is a good idea to paint it with one coat of slightly thinned paint as a "hardener" and protector from later warpage.

Before the metal sheathing is applied to the car body, degrease it with carbon tetrachloride (*caution: use this in a well ventilated room. Although non-flammable, its vapor is toxic and has been known to cause death*). After attaching the sheathing but before any hardware is applied, paint the metal with two coats of paint thinned with turpentine. Testor's paints give excellent coverage on metal when thinned with equal amounts of paint and turpentine. Such a consistency is ideal for painting metal as it flows out with no brush marks and yields an equivalent to a spray finish. Give the hardware one coat of this thinned paint and then attach. After being applied, a finish coat of the thinned paint is given to all metal parts and surfaces. After 48 hours, decals can be attached and when thoroughly dry, a coat of flat varnish applied.

Finishing J.C. car sides presents still another problem. Since these sides are embossed composition and prone to warp, special treatment is required.

Before any painting is done, it is advisable to waterproof the material. To do this, prepare a bath of white shellac by mixing regular shellac with denatured alcohol until it is quite thin. Pour the mixture into a shallow tray, sufficiently long to permit submerging the entire car side. Allow the side to soak in the shellac for 10-15 minutes. When removed, hang the side up "caty-corner" so that it will drain off at one point. Immediately upon removal, mop the front surface off with a flat art brush. When dry, the side can be painted and attached. If you propose to use cellulose acetate cement to fasten in

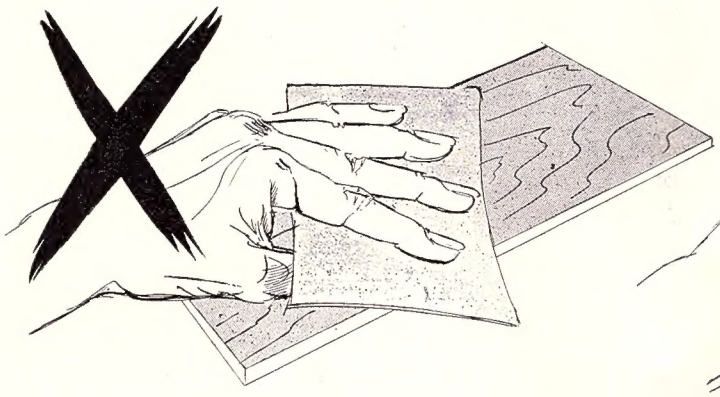
the window panes or the car sides onto the car, it is best to cover all the surfaces to which the cement will be applied with strips of masking tape before submerging the side in the shellac. Do not remove the tape until after all painting is finished and dry.

When painting roofs of passenger cars, it is desirable to get away from all shininess. Very few prototype cars have clean, shiny roofs. To give your model a roof finish which looks smokey and sooty, follow this scheme: Paint the roof with a good high-gloss black enamel. When dry, rub the surface *lightly* and *evenly* with fine steel wool, rubbing with the grain. The result is a lustrous, smooth, dull black with smoke gray overtones. Do not varnish after this treatment as varnish will tend to restore the true black color and kill that sooty appearance.

Another trick in model car finishing is the simulation of rust on the underframe, trucks and wheels. It is only occasionally we see a freight car that has just left the paint shops and most certainly an entire train of slick cars is indeed a rarity. Therefore why not give your cars that weather-beaten look? To imitate rust, paint your underframe and fixtures black. While this black is still wet, brush over it with a rust colored paint (*Sears Roebuck's #2439 Autumn Brown enamel is perfect*). Do not attempt to mix the paints on the surface, but allow streakiness to exist. The result is a mottling that appears like rusty metal smeared with grease and oil.

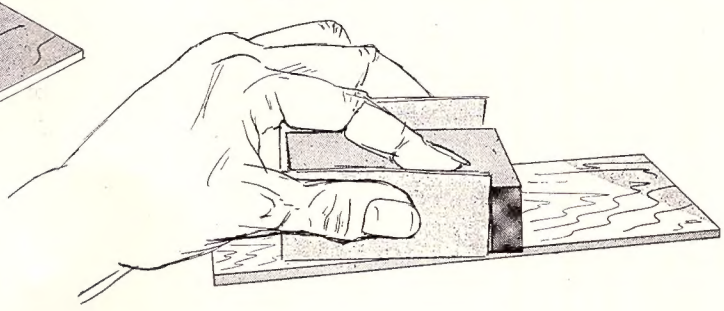
There are many more kinks and tricks to painting model rolling stock but these will suffice to help you produce a car, the finishing of which will not detract from your workmanship. Painting is an art and as such requires a little inborn ability, tempered with practice. It is not a matter of slapping on a layer of *thick goo!*

DON'T USE SANDPAPER WITHOUT SANDING BLOCK



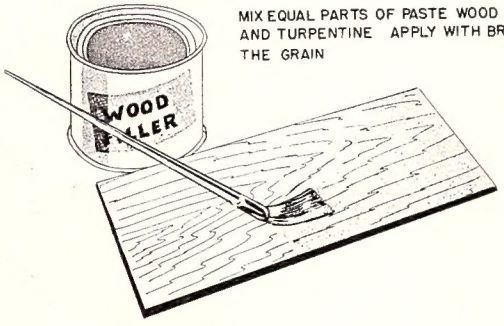
ALWAYS USE BLOCK WHEN POSSIBLE

SANDPAPER LIGHTLY USING LONG EVEN STROKES WITH THE GRAIN AN IDEAL SANDING BLOCK IS MADE FROM A CHUNK OF BRASS 3"X2"X1" SANDPAPER HELD IN THE HAND CAUSES WAVINESS AND INHIBITS THE RETENTION OF CLEAN SQUARE CORNERS



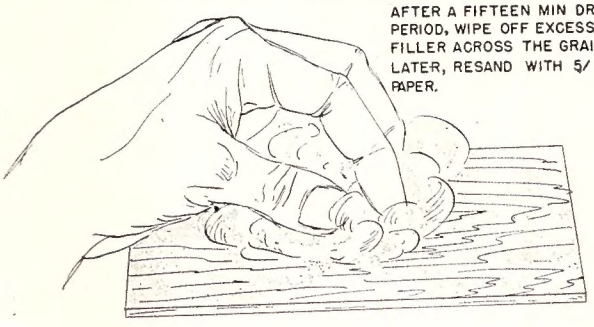
PAINT IN WOOD FILLER *AGAINST* THE GRAIN

MIX EQUAL PARTS OF PASTE WOOD FILLER AND TURPENTINE APPLY WITH BRUSH AGAINST THE GRAIN



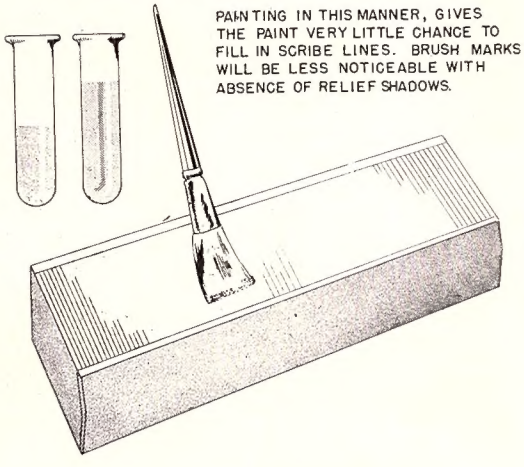
WIPE OFF EXCESS WOOD FILLER *ACROSS* THE GRAIN

AFTER A FIFTEEN MIN DRYING PERIOD, WIPE OFF EXCESS WOOD-FILLER ACROSS THE GRAIN. 24 HRS LATER, RESAND WITH 5/0 SANDPAPER.



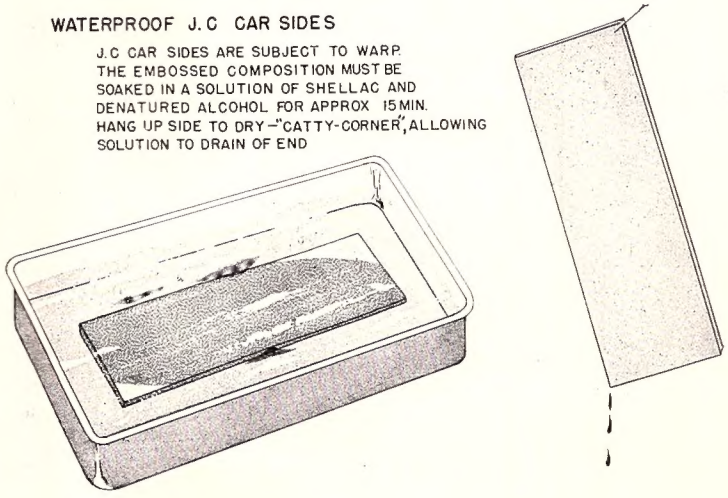
PAINT CAR SIDES *PARALLEL* TO THE SCRIBING

PAINTING IN THIS MANNER, GIVES THE PAINT VERY LITTLE CHANCE TO FILL IN SCRIBE LINES. BRUSH MARKS WILL BE LESS NOTICEABLE WITH ABSENCE OF RELIEF SHADOWS.

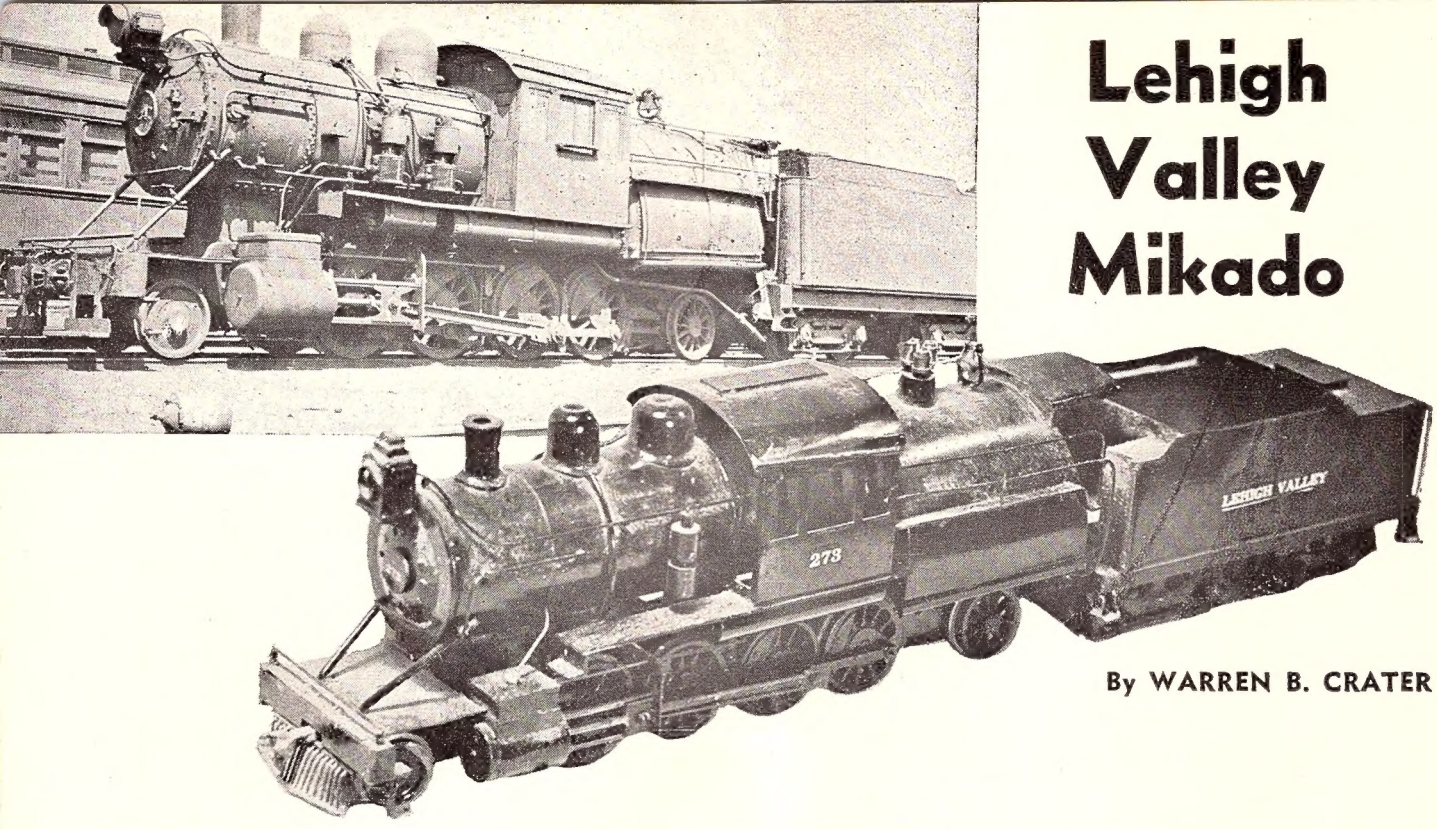


WATERPROOF J.C CAR SIDES

J.C CAR SIDES ARE SUBJECT TO WARP. THE EMBOSSED COMPOSITION MUST BE SOAKED IN A SOLUTION OF SHELLAC AND DENATURED ALCOHOL FOR APPROX 15 MIN. HANG UP SIDE TO DRY—"CATTY-CORNER", ALLOWING SOLUTION TO DRAIN OF END



Lehigh Valley Mikado



By WARREN B. CRATER

THERE are very few Mother Hubbards still in existence, and it is my intention to have a model of each type. This will eventually include the 0-8-8-0 mallet of the Erie. This model of the Lehigh Valley Mikado, like several of my other M. H.'s, was built after the last of the prototype was scrapped.

Checking with numerous photos of this class locomotive (Class N1), changes in location of the several auxiliary devices may be noted. Some were equipped with superheater and Franklyn Piston Valves with outside steam pipes. These are not shown on the drawing but will be given with an alternate cylinder sketch.

Construction of the model naturally begins with the frame. Since this is generally similar to the Lackawanna 2-8-0 in my recent article, we shall not go too deeply into details. The trailer permits an easier location for the motor and a wider selection of gearing. Reference to my article on worm drives appearing in MC, Nov. '46, should prove real helpful.

Frame construction follows my standard practice, using ⅛" x ⅝" cold rolled steel for the main frames and ⅜" x ¾" brass channel extensions. (*See sketch.*) It is necessary to have the driving wheels and axles to determine the size of bushings and the holes for them in the main frame. Assuming that the wheels with 3/16" diameter axles are available, the bushings should be 5/16" or having a wall thickness of 1/16". Locate the worm shaft bearings. The drawing suggests a convenient spacing which permits plenty of room for the motor in the firebox. Drill all holes in the main frame members which bolt together. Drill #43 for all frame bolts and counterbore #19 to a depth of 1/16" to receive the heads of 2-56 filister head iron machine screws. When assembling, line up all parts squarely and true. Top of the front extension should be 9/64" above top of main frame and rear extension 5/64".

Cut the pilot beam from ¼" x ⅜" brass. File out the coupler pocket from the bottom edge, ⅜" wide. A carrying iron of 1/32" x ¼" brass may be secured by 1-72 screws tapped into the beam at sides of the pocket opening (*see sketch*). Solder to front extension with top edges flush.

Cut out the top back of rear extension to receive 1/16" x ¼" tail piece. The bottom member is bent from 1/16" x ¼" as shown in the sketch. Both are soldered in position. Provide an angle at top of tail piece to which the expansion sheet at the back boiler head may later be screwed. A piece of brass may be soldered into the bolted connection of the main frame to the front extension, providing for cylinder bolt and the engine truck.

Since the cylinder saddle measures 13/16" x 13/16", it is logical to make this up from 1/32" sheet, using ¾" spacers (see sketch). Use a strip of ⅛" x ¾" brass, 2½" long as the cylinder base. When this is placed on top of the main frame, it brings the top or valve face to proper height. Lay out center hole for cylinder frame bolt and the steam chest bolts on 1¾" centers. Using two sheets of 1/32" thick brass, lay out and cut the front and back sheets as shown. Drill #48 and tap 2-56 for cylinder head centers. Solder to front and back of the back spacer to bring top edges in line. Solder a spacer of the same ¾" thick stock in top of saddle; drill and tap for the boiler bolt. Turn the four cylinder heads from brass stock. Turn to 21/32" diameter, drill the centers #43, round off the edges with a file and part off ⅛" thick. Fasten these in position with 2-56 R.H. screws and solder at the inside edges so it will not show. Now lay out the guide centers on the back heads. Drill #53 and tap 1-72. Remove the screws from the back heads to permit piston rods. File the heads of the screws in the front heads to depth of the slots.

Guides are 1/16" square drill rod or cold rolled steel, 1½" long. File off corners for 3/16" at front end and thread 1-72 to screw into the back heads. Steam chests (*see sketch*) are made from a solid block with covers screwed to the base and soldered.

If you want to represent the rebuilt engine, follow the sketch showing the alternate steam chest. After soldering to the base, drill out the center hole and tap ¼"; use a fine thread if available. Screw in short lengths of ¼" O.D. copper tube. File out a V at the inside where the bend will come before making the final bend. After the boiler is ready, cut and file to suit. The valve heads are small turnings soldered to front and back of steam chests. Strips of thin brass or tinplate 13/16" wide may be soldered to form sides of saddle and cylinders.

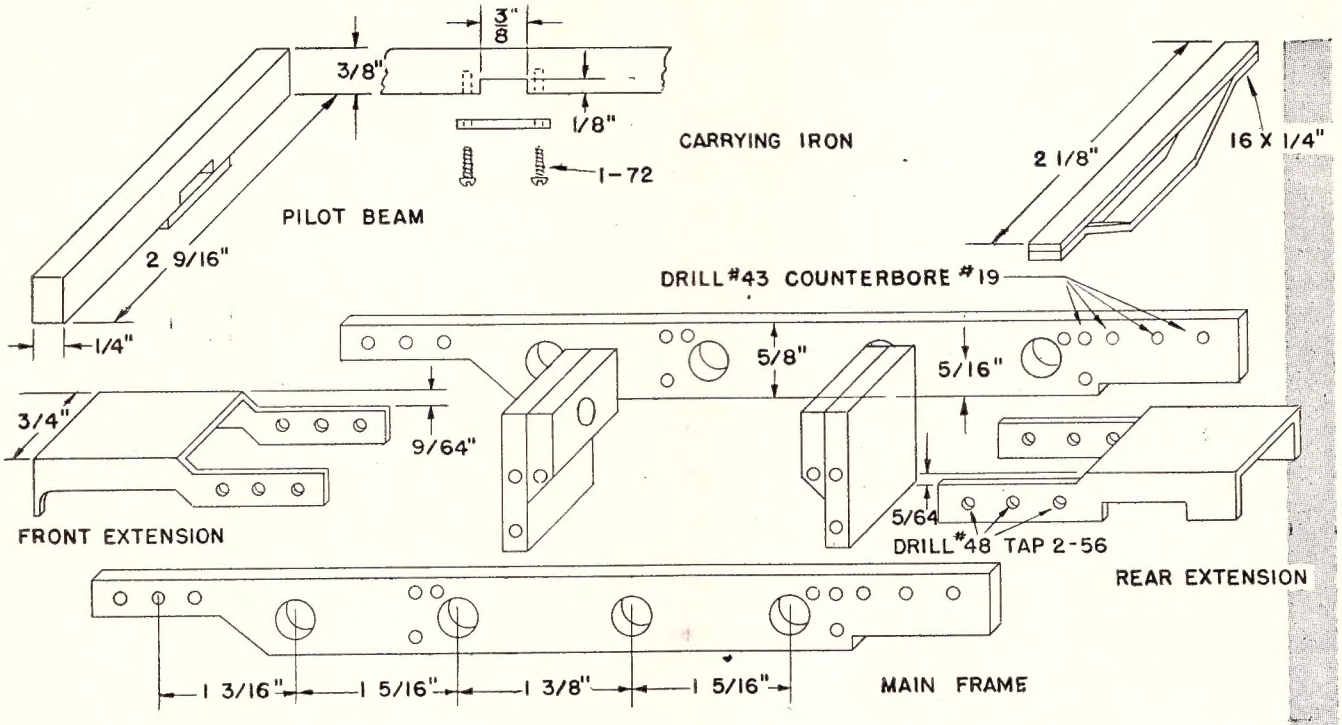
The engine truck and trailer frames are made from ½" x 1" brass channel, constructed and mounted in like manner as the engine truck for the 2-8-0. The pilot can be either a pointed wooden affair or a short steel one, or simply the foot boards used in switching service. If foot boards are used, they should also be used at the rear of the tender.

There is ample room for the reversing switch on the rear frame extension between the motor and expansion plate. Locate the collector shoe to suit requirements of the particular shoe used.

A deck plate of thin brass or tinplate may be soldered or screwed to the pilot beam, providing holes into which the front end braces may extend, these parts to be screwed to the boiler.

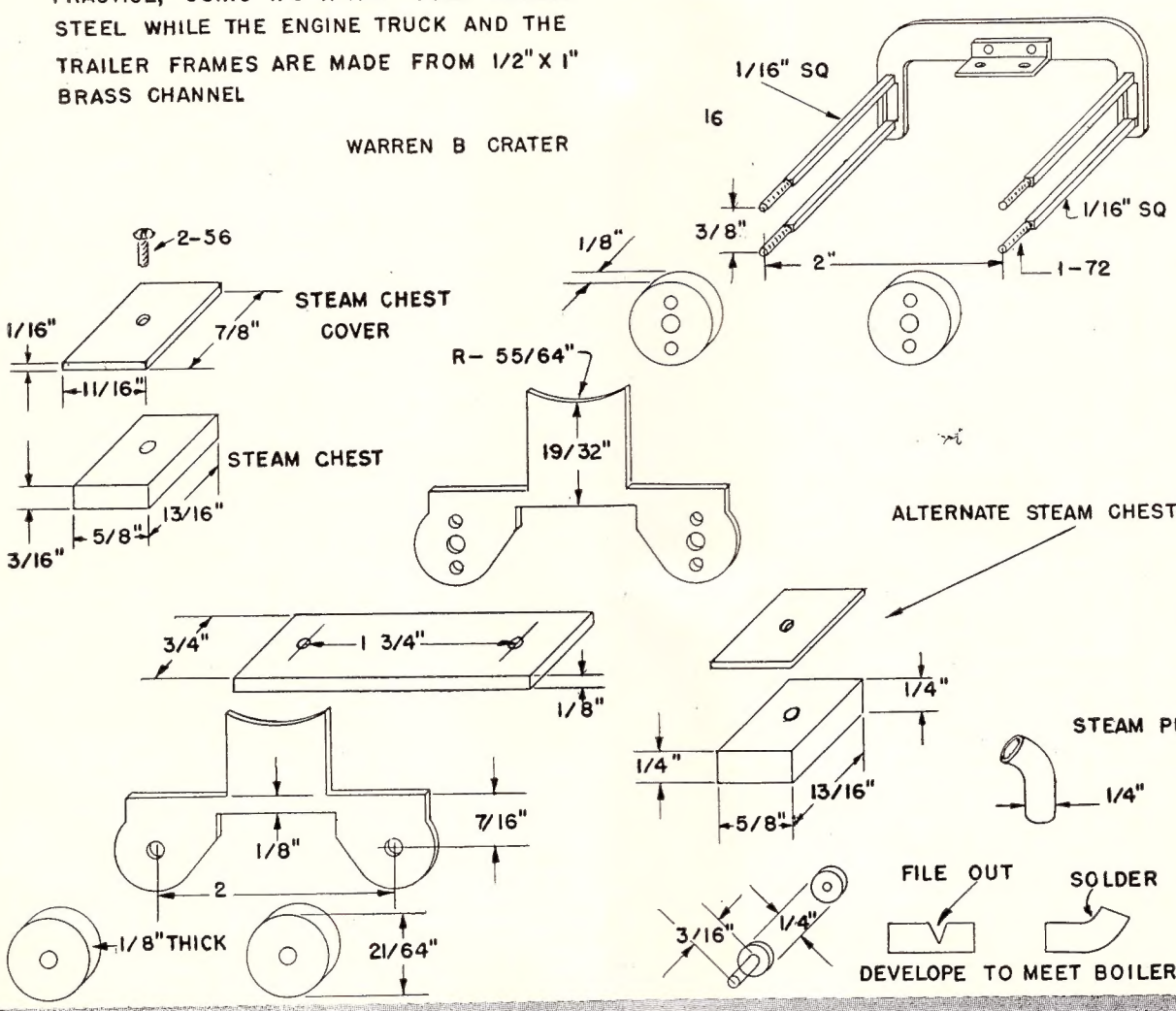
The boiler itself, being generally similar to those previously described, needs very little detailed explanation. Being straight barreled, there is no angular de-

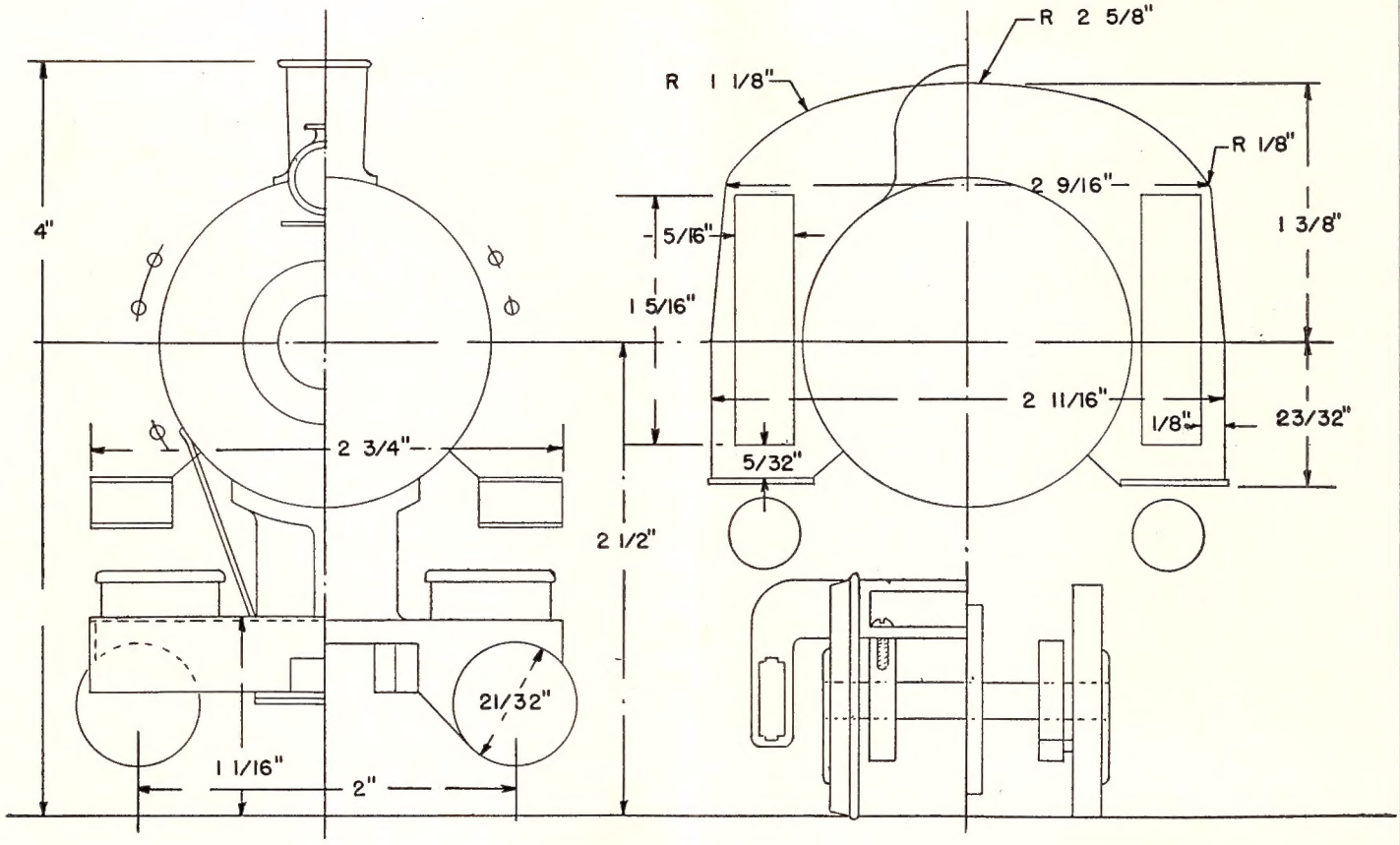
(*Continued on page 44*)



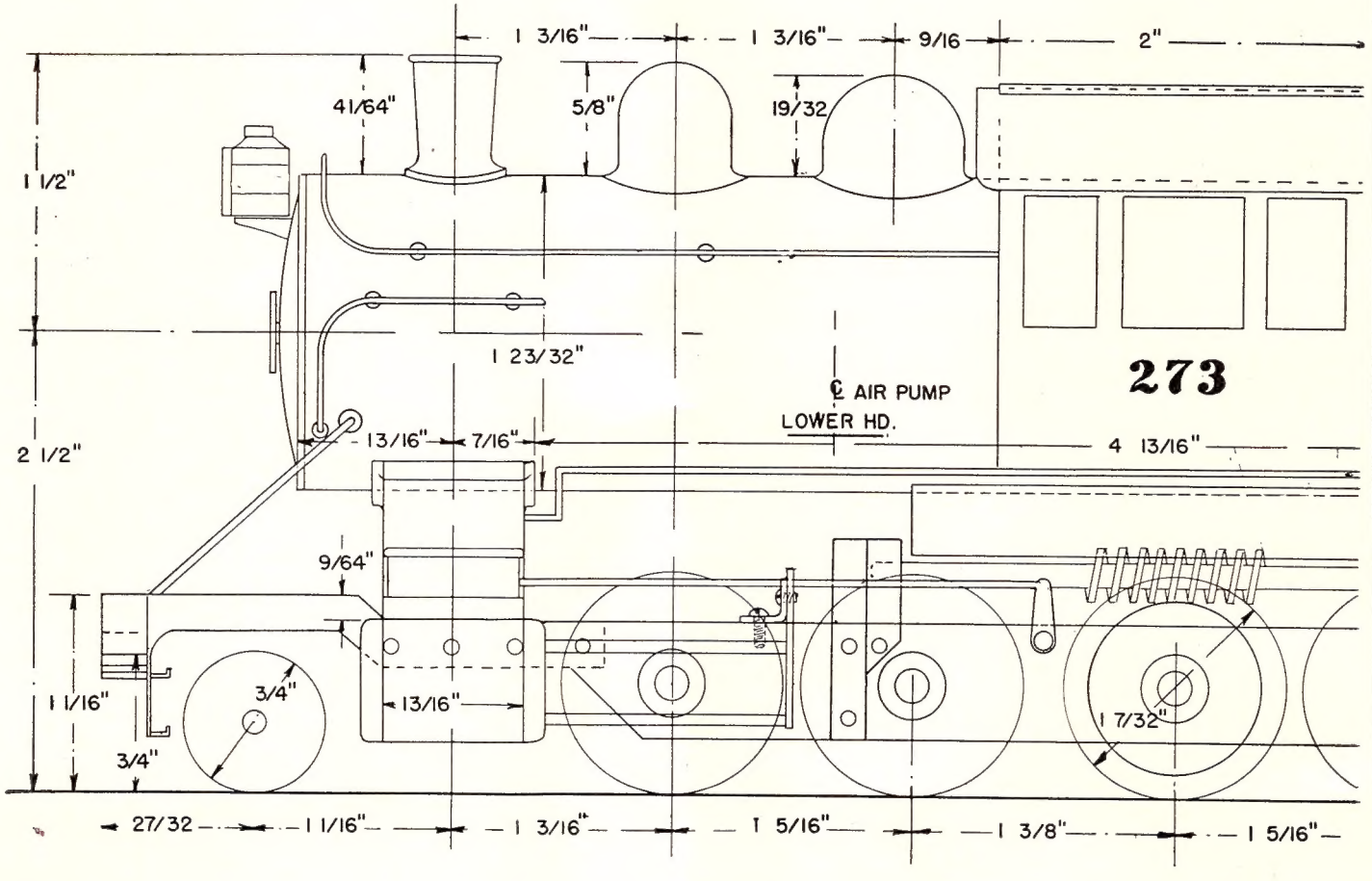
FRAME CONSTRUCTION FOLLOWS STANDARD PRACTICE, USING 1/8" X 5/8" COLD ROLLED STEEL WHILE THE ENGINE TRUCK AND THE TRAILER FRAMES ARE MADE FROM 1/2" X 1" BRASS CHANNEL

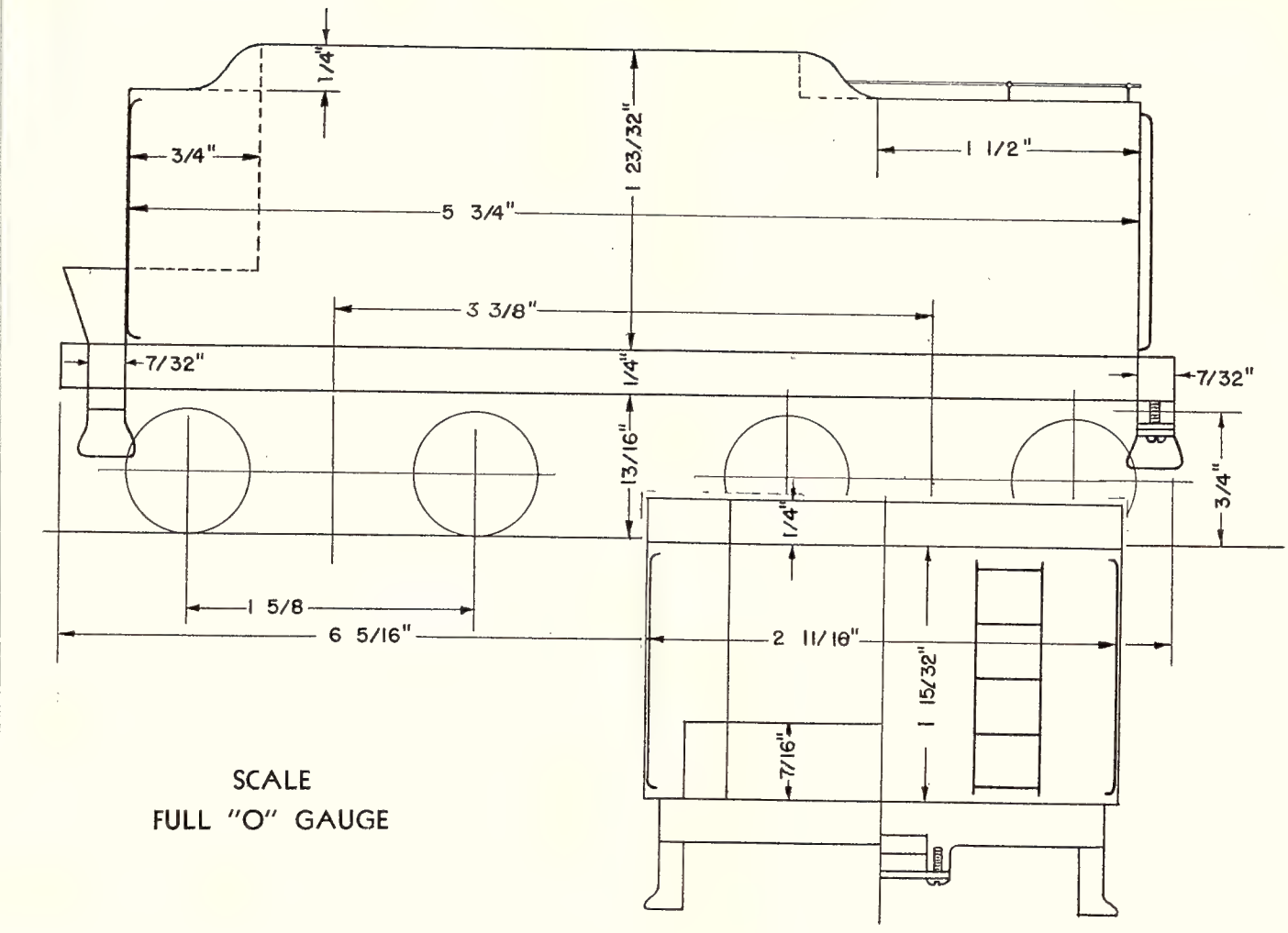
WARREN B CRATER



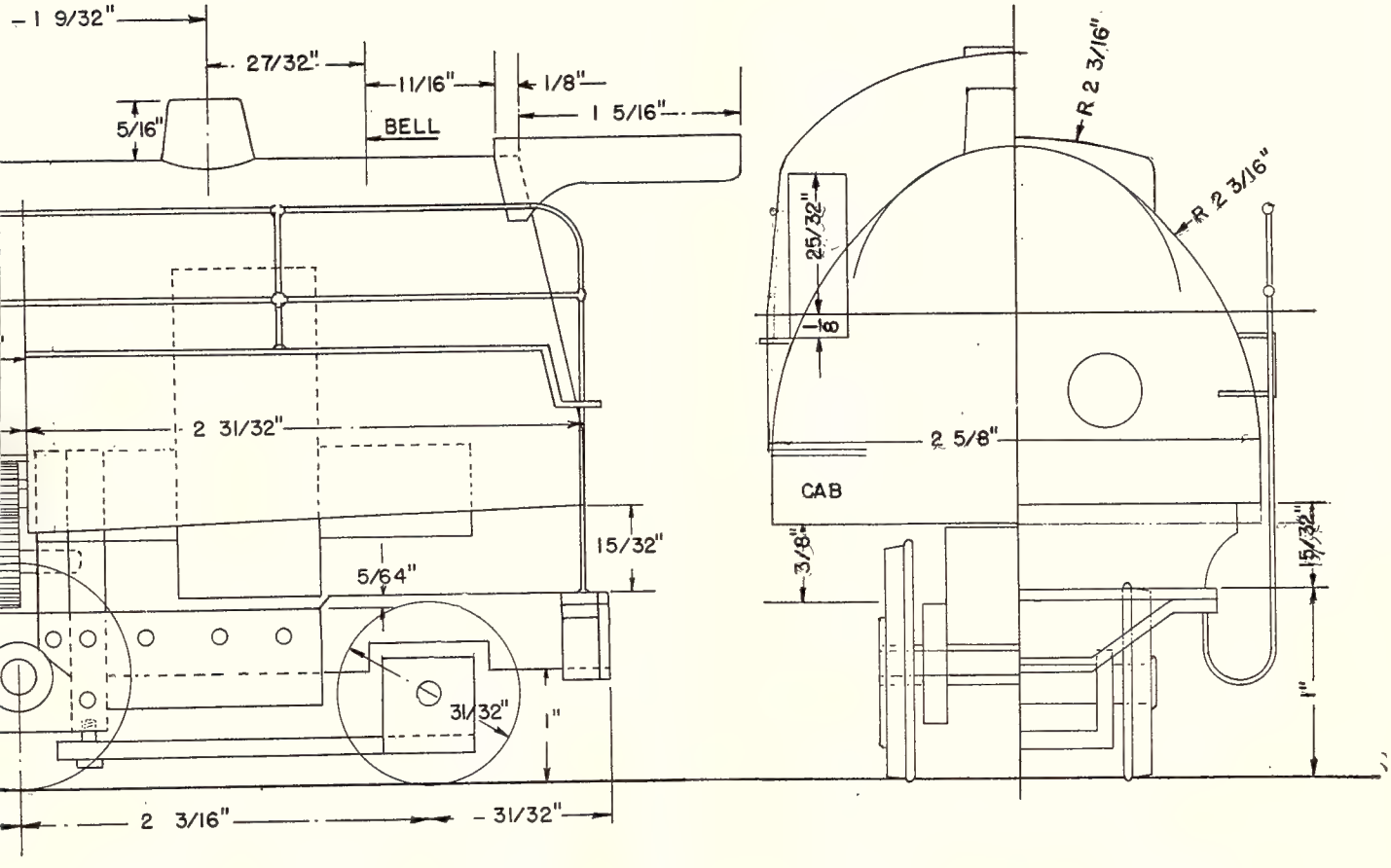


LEHIGH VALLEY MIKADO

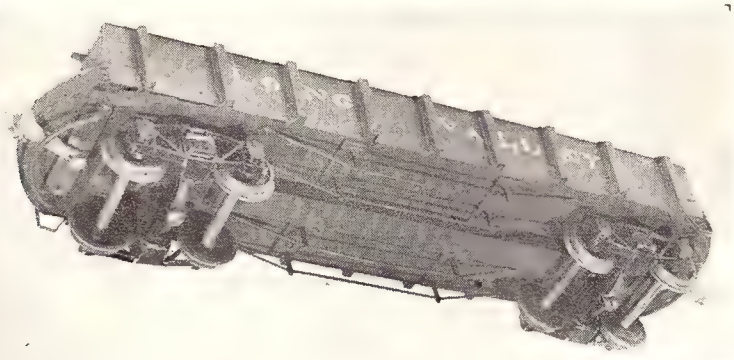




SCALE
FULL "O" GAUGE



Interurban SAND CAR



Build a few of these simple cars for your traction empire. They're good for maintenance and revenue service!

Photos by Haddad

from

LONG VALLEY ELECTRIC RWY.

HERE is an easy project to occupy a rainy weekend for the model traction magnate. Interurban sand cars were a common sight on most electric railway properties, and two or three gondolas of this type should be a welcome addition to your model trolley empire. They were often seen carrying ballast or other company materials for right-of-way maintenance, but were equally useful for revenue service. As an example, the Hartford Street Railway advertised sand and gravel delivered in these cars to any point along their tracks.

This model is not an exact copy of a specific car, but rather is made to general dimensions representing a composite style. It does, however, have the appearance of an old Indiana R. R. gondola seen on a spur near Fort Wayne some years ago.

The wooden floor serves as the backbone, supporting the superstructure, running gear and coupler assemblies. Construction should start with preparation of the floor (*fig. A*), selecting a piece of ¼" thick clear pine 10" long and slightly more than 2⅜" wide. Plane the sides smoothly to exact width. Using a compass, strike the end curvatures, cut to shape with a coping saw and smooth up nicely with sandpaper.

The center sill (*fig. B*) used to support the trucks, should be made from a harder wood such as maple. Cut and plane smooth to the dimensions shown. Note that a hole is indicated along the center line, 9/16" in from each end. These holes are drilled to proper size for the wood screws used as truck king pins and should be sufficiently large to prevent the sill from splitting. When prepared, the center sill is cemented and nailed, wide side down, along the floor center line, located equi-distant from each end of the floor.

Figs. C, D and E show respective dimensions for the superstructure parts. Use 1/16" thick pine for the side boards and ⅛" thick for the end boards. The stakes, also made from pine, are cut from 1/16" x ⅛" stock. Locate the end boards to bring their outer surfaces ½" in from the floor ends, then fasten in position with cement and reinforced by nailing up through the floor.

Nine stakes are required for each side board. Note that the center stake is located at the center of the side board, and the others are spaced out on 1" centers. Cement each stake in place with the top level to the top edge of the side board. Then drive in small escutcheon pins from the outside, clipping off the protruding points on the inside flush with the side board. The pin heads will resemble bolt heads seen in prototype construction. When the side boards are completed, put cement on the ends and lower portion of the stakes, then locate the assembly in position on the car. Escutcheon pins will reinforce the connection to floor and end boards. This completes the superstructure.

Truss rods are a very noticeable feature on interurban freight cars, so this model has four such rods grouped two on either side of the center sill. Material for these rods is small diameter straight brass wire. Location of parts forming the rod assembly can be determined by direct measurement on the side view. Small flat head wood screws, countersunk into the floor, act as anchor points to which the truss rod ends are soldered. Fig. F shows full detail of the brackets. Cut ⅜" lengths of 1/16" diameter brass wire for posts and solder them fast into the bracket plates. A small hole drilled in each plate between the posts will accommodate the wood screws that hold the brackets to the floor. To assemble, fasten the brackets in place, then solder the truss rods at the bottom of each post and finally clip the rods to length and solder the ends to the anchor screws.

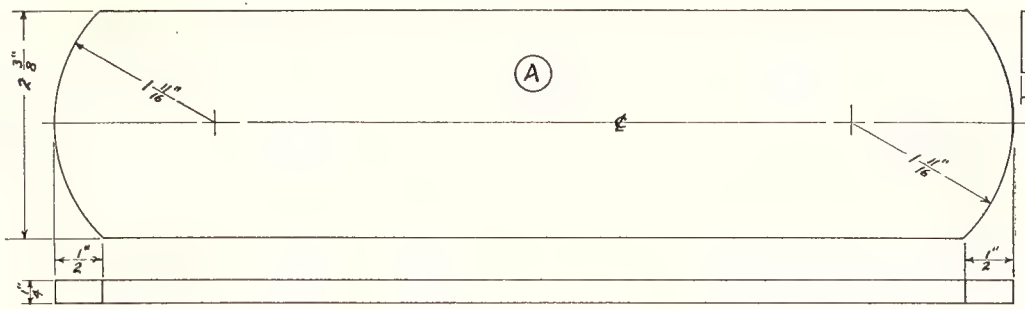
Since the model will be required to negotiate sharp curves, full radial, interurban style couplers should be installed. The car pictured, when coupled to its mating car in train, will swing a 10" city curve without any difficulty. Details of the couplers will be found in fig. G & H, while the assembly method is shown in the exploded and bottom views. Note that the unit principle is used so that the complete radial assembly can be removed at will for the inevitable repairs. The coupler itself is a standard die cast dummy or operating type, drilled #44 at the end. A flat head 2-56 screw serves as the coupler swivel pin and should be firmly soldered into the countersunk hole at the plate center. Next place the coupler on its pin and lock it with a 2-56 nut which in turn is trapped by a spot of solder. Form the support bar from 1/32" brass wire to the curvature shown in fig. H. Solder it fast in the coupler plate.

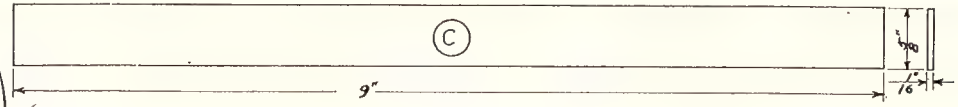
As the final step in construction, locate the completed assemblies on the car ends as shown in the bottom view and secure them with small round wood screws.

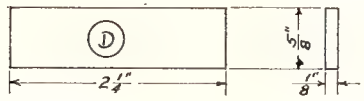
The most commonly used trucks for traction freight cars were of arch bar construction and the model photographed is equipped with units of Scale-Craft manufacture. When installing the trucks, use snug fitting, round head wood screws as king pins, and shim with washers if necessary, to secure correct coupler height. This height was standardized for many years at ¾" coupler center line to rail head, but NMRA has recently adopted 11/16", so suit yourself on this matter.

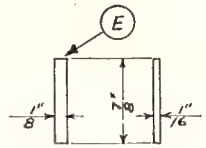
With the addition of a brake wheel and steps, clearly illustrated in the photos, the car is completed. Further embellishments such as air brake apparatus can be added as desired.

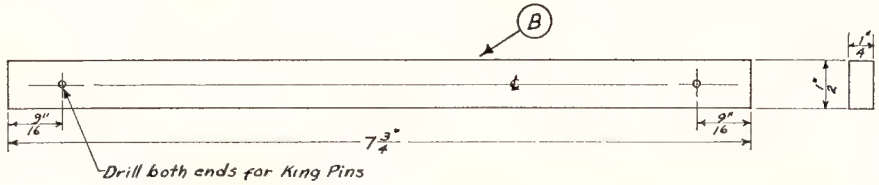
In regard to painting, traction freight cars of this type were generally done in drab colors and in more recent years of declining revenues were quite weather beaten in appearance. Perhaps dark stain would recreate this effect.

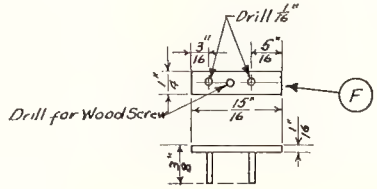


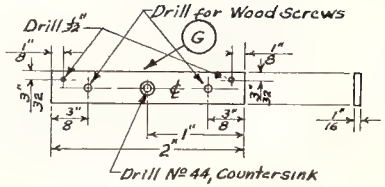


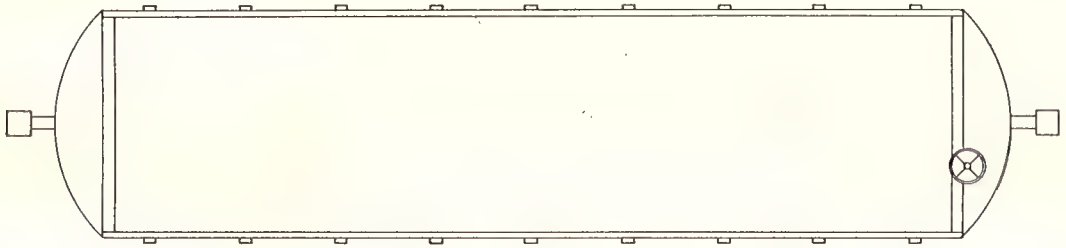


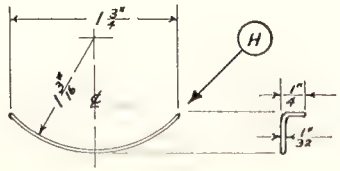


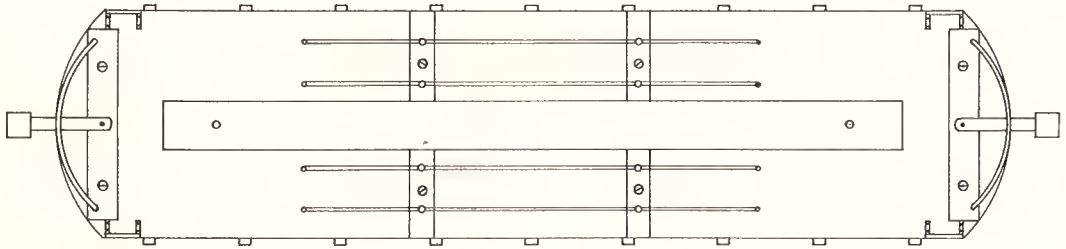




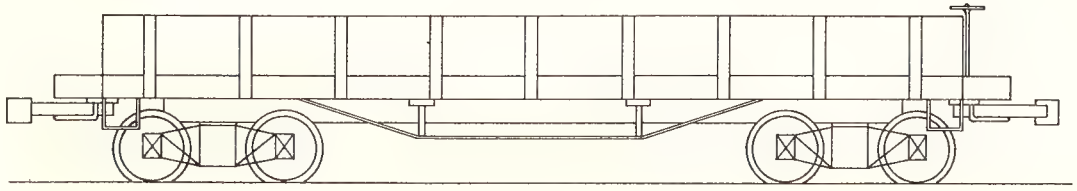


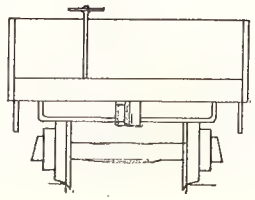






ITEM	ARTICLE	MATERIAL	SIZE	AMT.
A	FLOOR	PINE	10 X 2 3/8 X 1/4	1
B	CENTER SILL	MAPLE	7 3/4 X 1/2 X 1/4	1
C	SIDE BOARDS	PINE	9 X 5/8 X 1/16	2
D	END BOARDS	PINE	2 1/4 X 5/8 X 1/8	2
E	STAKES	PINE	7/8 X 1/8 X 1/16	18
F	TRUSS ROD BRACKETS	BRASS		4
G	COUPLER PLATES	BRASS	2 X 5/16 X 1/16	2
H	COUPLER SUPPORT ROD	BRASS	1/32 DIA.	2



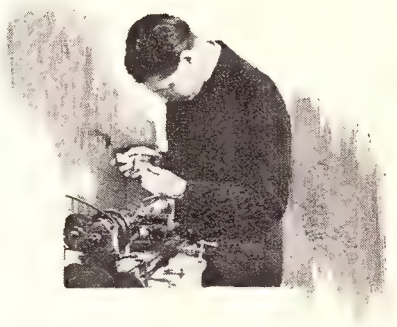


INTERURBAN SAND CAR

LONG VALLEY RAILROAD
MONTCLAIR, N. J.

Micro Trains

WORLD'S SMALLEST SCALE MODEL RAILROAD EQUIPMENT



By C. NORSTRAND
alias CASEY JONES

IT all started back in the twenties when I boarded a narrow-gauge locomotive to act as a fireman with my uncle at the throttle. He was then engineer on the Norsholm, Vestervik & Houltsfreds Railroad and taught me how to fire an engine. It was really a tough job in spite of the narrow gauge, the engines being quite heavy with a large overhang.

Santa Claus had really come to me in the middle of summer. Every Christmas that old bearded gentleman had brought me trains since I was a little boy, but now he had given me a place on a real train! *Was I lucky!* Every week I would borrow my uncle's Swedish Locomotive Workers Association Journal and there I would see pictures of new American rolling stock. The first picture of an engine seen in this magazine was the New York Central Hudson 4-6-4. That beauty has taken me and nothing will ever take its place!

My first model was made from painted paper and when I today compare her with my new metal engine, it's the exact same scale! Time went on. I built up a big HO layout, using one Varney Pacific, two Mantua jobs, two rebuilt Knapp locos and a fifth free-lancer, plenty of freight and varnish cars, over forty switches of different kinds, working signals, turntable and engine house with automatically operated doors. All of this was in HO gauge and today it runs without any repair for the fifth season at Sweden's Coney Island in Gothenburg. Over 100,000 visitors have paid to see it. The next layout was built in 1:100 scale with overhead catenary system for the Swedish State Railways Museum in Stockholm. This also was an exhibition model.

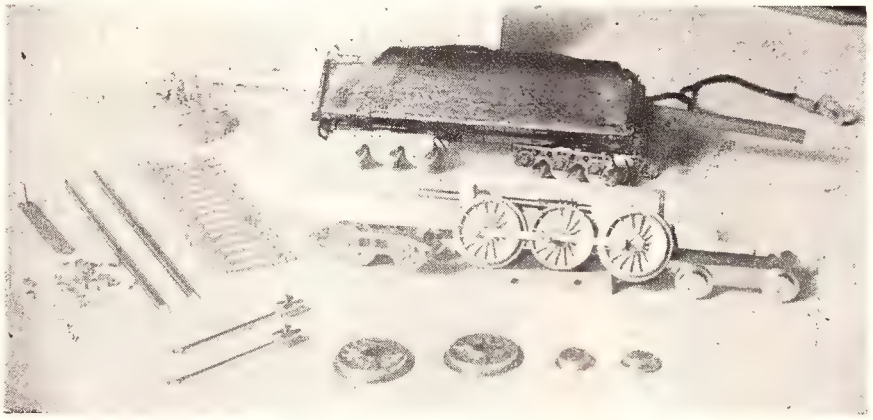
But through all this time, HOO was in my head, scale 1:152 or 2 mm. to the foot. I was then approached and asked to leave my position as publicity manager for a big American movie company in order to give the model builders of Sweden something to work with during the war. This I did and constructed the first Swedish HO engine kit, an electric type job with pantagraphs and the first permanent magnet motor to go with it. (The magnet was made of Alnico-steel.) It was then they saw my first engine in HOO, a model of the same engine just produced in HO. Uncle Eric LaNal saw it and became real excited! My decision was made; give the model builders real American stuff and in the new scale. My dreams were finally coming true!

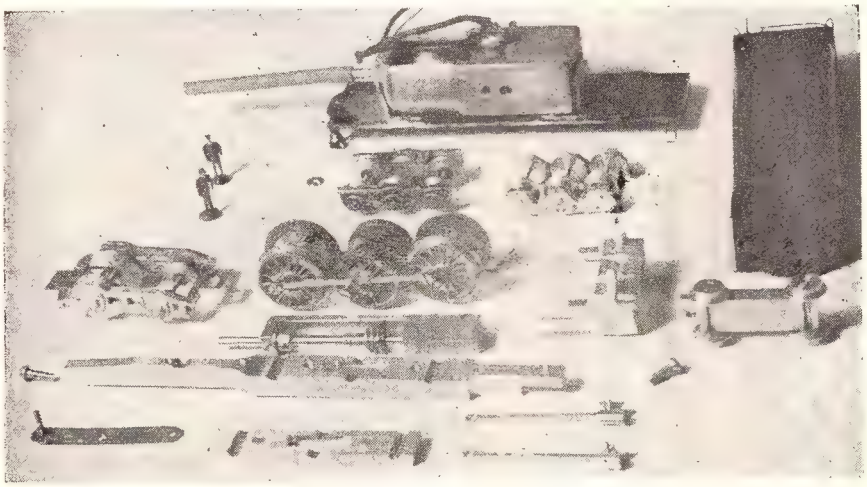
Drawings of the Hudson locomotive were found in both the MODEL CRAFTSMAN Magazine and their book of locomotive plans, and with these as a guide, I started drawing myself. And brother, what a job! Micro trains are a one man's job. Then followed drawings of the pressure casting dies and pressure casting machines. Sample kits were made up, for you have to build it at the same time exactly in the same manner as with the pressure die cast jobs in manufacturing. Publicity jumped overnight. But I had not thought so much of the commercial aspect as the idea of giving my fellow model railroaders an opportunity to have lots of trains in a small space. Flats and apartments in Sweden are very small. And I believe that many of you in the States have a wife who does not like the idea of having you arrange an elevated line to reach the telephone simply because of your railroad!

We have decided on HOO for the new scale because it is exactly half of the OO scale (1:76). This gives us 1:152 for the new scale—HOO or half OO. This is also 2 mm. to the foot as mentioned before. Further special conditions were decided on for the Micro Trains—everybody between 7 and 70 should be capable of building a train without being a master mechanic or a watchmaker. Only the simplest of tools are to be used in mounting the kit. The trains were to be attractive, operated on two-rail. The trains should also be safe to operate without bigger chances of derailing than HO.

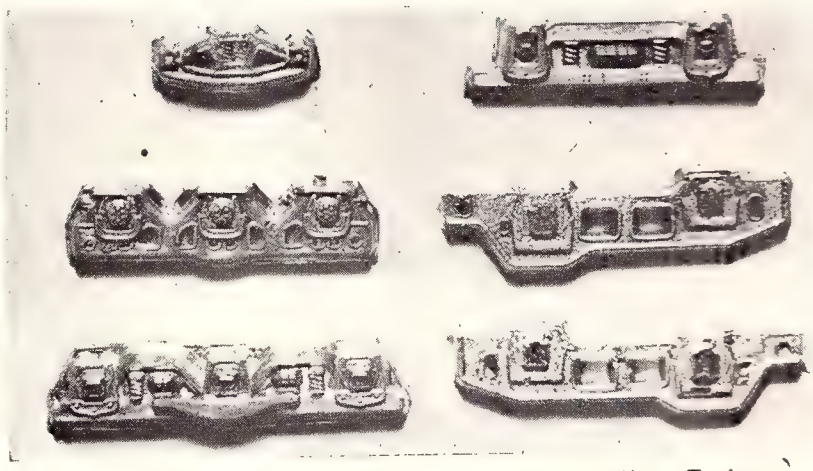
These conditions were followed closely, the trains not being as expensive as HO equipment. Only screw-driver, jeweler's file, brush and paint are necessary for

(*Continued on page 44*)

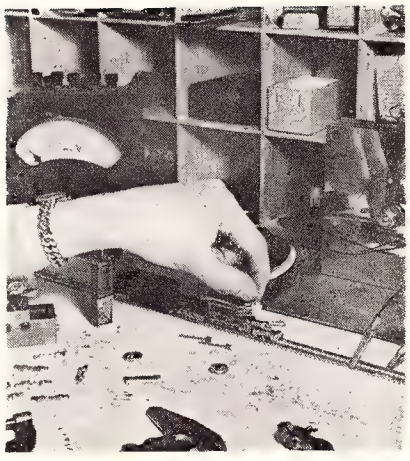




Two views of various parts which fit together to make the HOO Hudson. In spite of its small size, the complete detail is there to capture the interest of the railroad fan.



Notice the detail in these truck sides for Micro Trains.



Working on the chassis of an HOO Hudson.

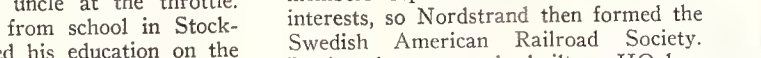
ABOUT THE AUTHOR

CARL E. NORDSTRAND was born in Stockholm, Sweden, 35 years ago, with railroading in his blood. His ancestors had built a narrow-gauge railroad in Sweden and there he practiced firing locomotives with his uncle at the throttle. After graduating from school in Stockholm, he furthered his education on the continent in Germany, England and France. After being a reporter at the Swedish Reuter or United Press, he again went to France and England, studying in the advertising department of Du Pont de Nemours, Metro-Goldwyn-Mayer and at the Daily Express in London. He later went into the movie business and during the war was publicity manager of Universal Films, Inc., branch office at Stockholm. Incidentally, it was not pure accident that the Ministry of Information in London received copies of German propaganda pictures by the secret overnight air service from Stockholm. In 1944, Nordstrand entered the model field as a manufacturer and thus transformed his hobby into business due to the large demand for model railroad items.

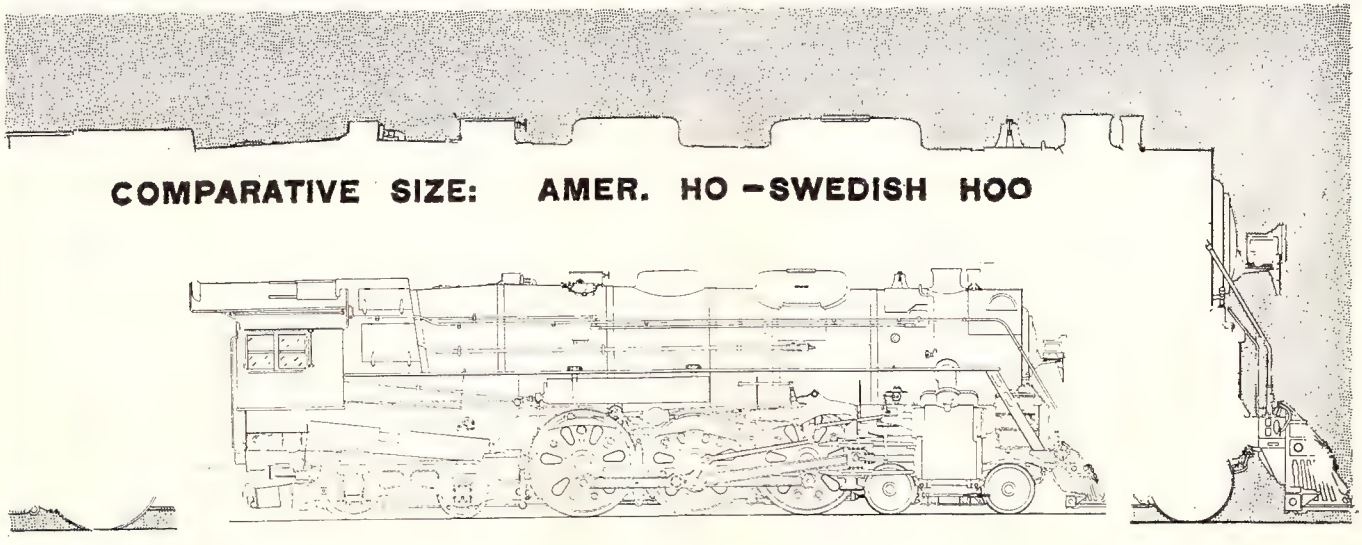
Nordstrand started the model railroad hobby back in 1938, when he saw a copy of the only American model railroad magazine at the Swedish State Railways Museum. His dreams had come true. His interest had always been connected with American railroads, but so far available drawings had failed him. Immediately he went into action and with some fellow railfans formed the Model Railroad Club of Stockholm. In 1939, some of the club members separated from differences in interests, so Nordstrand then formed the Swedish American Railroad Society. During three years, he built an HO layout with all movable items electrically operated and later sold it to the Swedish Coney Island—Liseberg, Gothenburg, where it still operates. Next he built a model railroad for the Swedish State Railways in 1:100 scale with overhead catenary system, now running at the Railroad Museum in Stockholm. His next project was a model locomotive kit with the first Swedish permag motor to go with it. Now he is manufacturing the Micro Trains from American prototypes and hopes to have suggestions from American railroaders concerning new items.

In addition to his model manufacturing, Norstrand is editor of the model department of the largest technical magazine in Northern Europe, the Teknik for Alla (Technic for everybody), publicity manager for that and the publishing company's two other papers and is also preparing Sweden's first magazine about plastics. He is also a designer and die maker and has constructed both the dies for metal and plastics and the pressure machines for them. His prmiary wish is to see America before he leaves the model railroad earth and grabs the throttle of the Heaven Bound Limited. Perhaps he'll have the opportunity to stay in the the U. S.; miracles do happen!

Nordstrand wrote the first article on Model Railroads in the Swedish weekly Liv (Life) back in 1938 and adopted the signature "Casey Jones" after that famous American engineer and has since then written about a hundred articles on his hobby, covering engines of Swedish and American design, cars, track laying, signals and, in fact, most every model item. His specialty is New York Central and Pennsylvania rolling stock and electrical equipment.



Pint size and midget, too, when compared with a standard size match box. Note the working pantographs which collect current from overhead catenary system.



Rail Fans Take Caboose Jaun

ONE cold day last winter, members of the North Jersey Midland Model R. R. of Irvington, N. J., got that old wanderlust feeling, "spring fever." Their interest centered on a caboose trip, upon a favorite railroad, the Erie. (*This was chosen because of its freight expediency.*) This was not to be a regular fan trip, but was to be on one of the railroad's regular runs.

Through the cooperation of the Supt. of the Erie R. R. and the most exalted "BRASS HAT" permission was obtained for a trip over the New York division of the Erie, Port Jervis to Secaucus, N. J., a trip of 95 miles via the Graham freight cut-off. No regular passenger trains operate over this cut-off, it is what is called a low grade route, eight miles longer than the main line. The freight was #98, the fastest between Chicago and New York.

This trip was planned for April, but was delayed until June 29. Two groups took the trip on separate days and the experience of the following members is related: Newt Guerin, Pres. of the Club; Dave Sacks, Sec. and writer of this tale; Angelo Tartaglia, Jack Smith and Walt Eissmann.

"At Port Jervis we all took pictures of the business end of the Erie's pride and joy—No. 1 and durn if an old employee, probably a car tonk, didn't come over and object. Evidently he didn't know the war was over! After a short conversation about the good of our associations, he obliged and in fact looked the other way.

"At the station the trainmaster was collared and was soon holding a discussion on railroads and railroading in all its glory. He pointed out the highlights of that locality, such as the grades load limits for each type of power, as well as the difference between the freight cut off and main line. There was much activity all afternoon and after filling our boilers at the local restaurant, we struggled over to the freight yards.

"The yards creaked and crawled with activity, Mikes, Switchers, Berkshires, Pacifics, Consolidations. It was a picture fan's paradise. While gazing thus, a flatfoot pounced upon us, thinking he had a 'jugful' of victims for the 'pokey.' His eyes popped when we flashed our sacred printed black and white from none other than the Brass Hat.

"Finally our head end hoved into view with a tail end of 121 'hot' cars bound for Eastern markets. The 3300 class Berkshire was 'de-coupled,' another 3300 substituted and on the rear were tied a 4200 class 2-10-2 and a 3000 class Mike—up ahead lay the Shawangunk Mountains, a plenty steep pull.

"We boarded our crummy and we soon on our way out of the Port Jerv yards. We crawled along at 10 or miles an hour and made the 10 miles the top with plenty to spare. Here w stopped and the air hose between th caboose and the pilots end of the tw pushers was separated. Again we toc off, the two pushers going for all the worth. As we hit about 30 they gave grunt and the lone Berkshire did th dirty work, and still picked up spee All this took place on an outside thir track used only for upgrade freight an any slower traffic.

"A mile or two from where we droppe our hind power, we separated from th main line and dipped down into th Graham freight cut-off. From here w entered the mile long Otisville tunne The five of us were sitting in the 'coo loft' almost dying from the air. As w emerged into the daylight durn if w didn't look like coal miners, the rea hack door had been left open!

"Everything went swell for a while, w highballed along at 60 and 70 miles pe hour, the cars swaying and flying, n two in unison. What kept them upright especially a high wagon top box car full loaded, was beyond us. As we passe other freights, it's a wonder paint wasn scraped off the sides.

"Our head-end 'driver' gave it the gu as we headed for Newburg Jct. on th main, for he was trying to run ahead o #28, the Mountain Express. We cam to the signal board about 2 miles fron the Jct., it showed caution—we had los the race. At one mile our board showe red, so we crept along at 2 miles pe until the block was cleared ahead. The we took the crossing and crossovers an once more picked up speed. As this wa a yellow block area we stayed at 40 t 50 until we hit the 4-track main a Suffern, in the suburban area of New York. Here we took the inside trac and were on our way again, hightailin for our goal, Secaucus, N. J.

"After a close race with a second #9 the excitement eased up. We pulled int the Secaucus terminal three hours afte leaving Port Jervis, a total of 95 miles We really moved out. Along the Secau cus roundhouse the hind brakeman tol us to hold on as they 'pulled the pin' t let us roll with the double headed caboos onto the caboose track. Slowly the brake man tightened the hand brake and w rolled into the string of crummys ahead Our trip was over."

This trip will never be forgotten by th lucky fellows from the North Jerse Midland Model Railroad Club who wer able to make it, and all through the cour tesy and generosity of the Erie R. R.

Photos on left read from top to bottom. Killing time, waiting for the 3300 #3358 pulling into the yards to be changed for another 3300 Berkshire. Passing a freight in high gear, photo taken from fireman's seat; the two pushers with crummy for the 3% grade up the Schwangunk Mountains. The main line on the left, to the right the Graham cut-off.

Photo by David Winans

Your Nabor's Pike

WANT THREE BUCKS? That's what we're paying for both photo and appropriate caption appearing on this page. Two bucks for each photo without caption. Here's a good chance to let your "nabor" see your work and make some easy money in the bargain. Photos are selected on a basis of good photography and reader interest. We do not limit you to some super-detailed model, so don't be bashful—your photo may be the next to appear on this page. Include all pertinent information regarding scale, gauge and all interesting facts. Send material to the Picture Editor, Model Craftsman, Ramsey, N. J. Photos will be returned on request.

LOADED BABY. Better not ask Paul Dreykus, Newark, N. J., about the home-made load on this 16-wheeler baby. It has him confused too! Paul built this up from parts of old radio tubes, "precision shape" angle iron beams and various junk. Note the ventilating louvres on the right of the inside tank, made from part of a radio tube. The car was lettered with ruling pen and is equipped with airhoses and uncoupling levers.

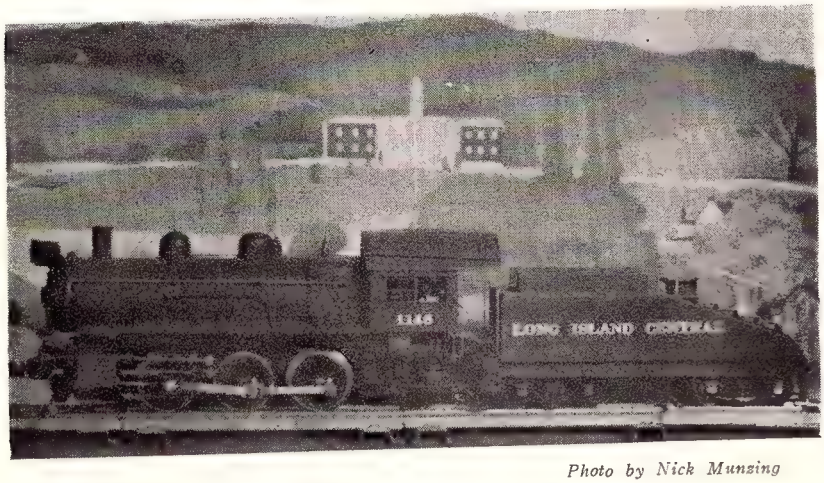
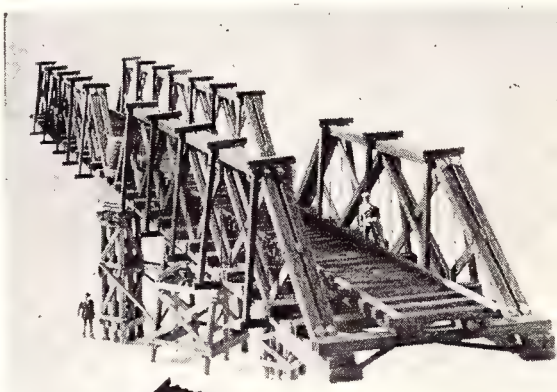
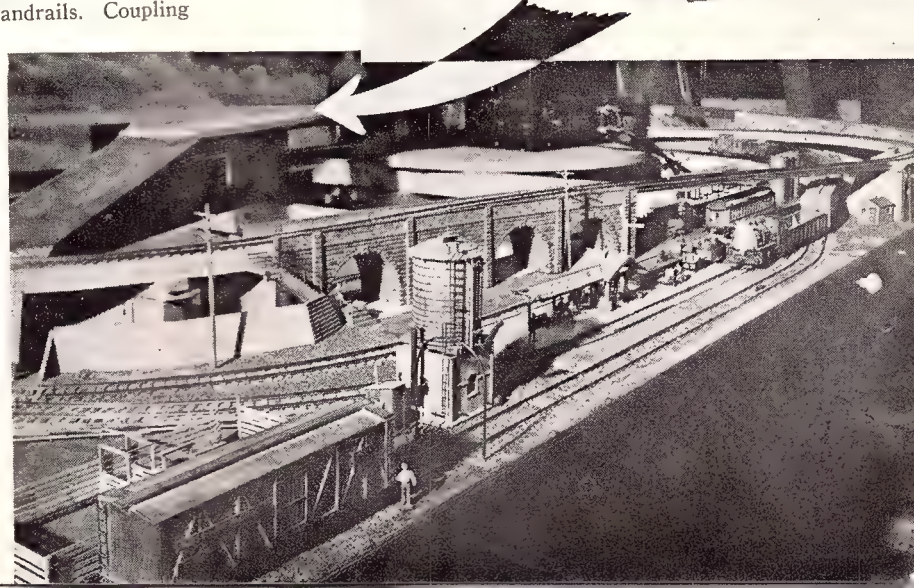


Photo by Nick Munzing

CONVERTED SWITCHER. This little Lionel O-gauge switcher was converted over to scale by Bill Gohring, Chairman of O-gauge for NMRA, and is now running on the Hollis Club layout, Hollis, N. Y. Bill has done a sweet job on this conversion, making the tender up from 13-gauge zinc with paper clips for handrails. Coupling hose carries feed working E-unit in tender.

Photos by John Allen





STRAINING BEAM TRUSS built by John Allen, Monterey, Calif., from Southern Pacific plans. The piling is John's own design to fit a skew space where now a temporary board bridge rests. Total length of the structure is 145 scale feet, made of balsa strips and steel wire rods. This bridge will cross the tracks at Gorre on his HO scale GD line. All his structures and over half the rolling stock is built from scratch. View is taken from front of layout with portion of controls seen at far right. Curves go down as small as 14" radius, but operation remains good with rolling stock of 54' or less.

Trolley Trackwork Troubles

Let an old hand at this game tip you off about the basic reasons for so many derailment worries

By WILLIAM SCHOPP

TROLLEY track troubles are much more numerous than on a steam railroad due to the sharpness of the curves and switches and the steep grades. Still another factor which enters the picture is the difficulty of working on track under and around the complicated wirework that goes with puzzle trackwork. In some respects, it is slightly less trouble—only single cars are run as a rule, not trains. Two-rail being out, the rails do not need to be electrically separate.

Before ascribing a derailment or rough passage to the track, it is well to be reasonably certain that it is not due to the car that goes off. Generally, if every car goes off at a certain spot sometimes, then it is the track. But if only one car hits the cinders, then it is probably some quirk in the car. I have in mind an accident on a friend's pike where a trailer car would derail every time when going through a grade-curve-switch combination. He was quick to ascribe the derailing to having a switch located on a curve of a hill, but careful observation showed that the car was lifting off the rails due to insufficient pivot in the couplings. A slight change in the couplers did away with this derailment site.

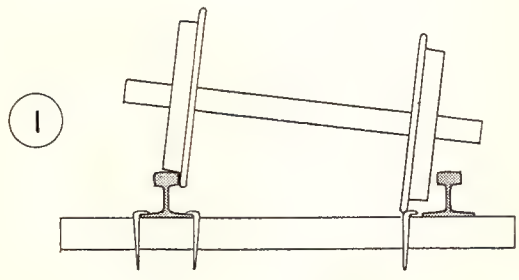
That brings out what I would call the first rule for running down your derailment causes—*Observe!* Run the car back and forth over the suspected place many times, watching the wheels closely. Try it slowly under power. Of course, it may stay on when going slow. Try it fast under power, then back up and try it again. Pushing the car along manually sometimes works although many derailments will not show up in this way. If you are still unable to see what is doing the dirty work, take a loose truck and, pushing it through by hand, observe the foibles of all four wheels at once under varying speeds, pressures and sideways tensions. Make certain this truck is in gauge and, if possible, has the same type wheels as on your trolley trucks.

Many derailments are due primarily to having wrong track gauge. A *too-wide* gauge may drop a wheel down inside the track as in fig. 1, while a *too-tight* gauge may force a wheel up, causing the flange to ride astride the rail as in fig. 2. The majority of these gauge troubles may be corrected with a well placed spike or two. Just because your railroad is "finished," don't get the idea that you need never add another spike. In stubborn cases, a brad or screw may be used instead of a spike, or the rail may be soldered to the head of a spike or brad. For a good solid job, it is a good plan to slip a metal tie in place and solder it to both rails, although solder will in time break loose if there is any tension on the joint.

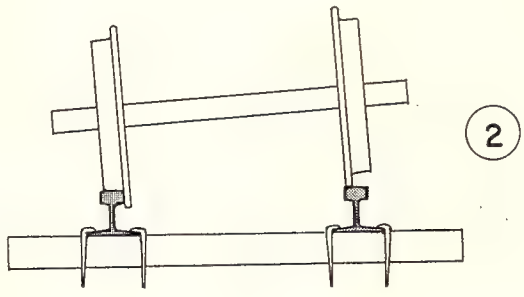
Differences in the level of your rails will cause trouble and this will frequently occur at a joint in the baseboard. The remedies just mentioned should work, plus the use of shims. If you're bucking a really stubborn case of "rising rail," this can be fixed with a small screw pinching against the base of the rail. Occasionally a guard rail on the *high* side will do the trick.

Guard rails are very wisely used on real electric lines and you should not spare them on your model pike. Guard rails will cure many derailment ills, but *not all.* They should fit very snugly against the running rail, base to base. If they are very long and you have difficulty in fitting spikes between the two rails, solder the guards to the outside spikes as in fig. 3. It definitely helps to have the guard rail slightly higher than the running rail. This can be accomplished by pulling soldered spikes a little out of the ground, or by soldering a length of bell wire to the top of the guard rail.

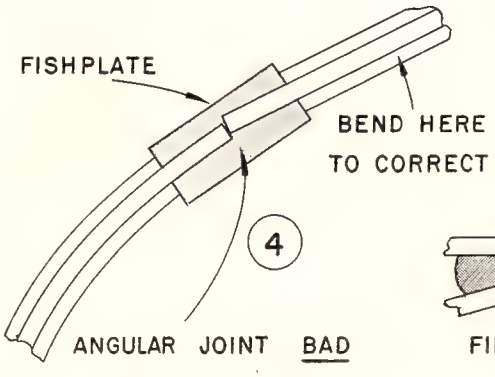
Guard rails on sharp curves are a necessity. But if you find it necessary to guard *both rails,* make certain the guards do not infringe on the backs of the flanges and cause derailments or tight places. On sharp curves, guarded or not, the gauge should be widened a very little, and wider than usual flangeways are needed.



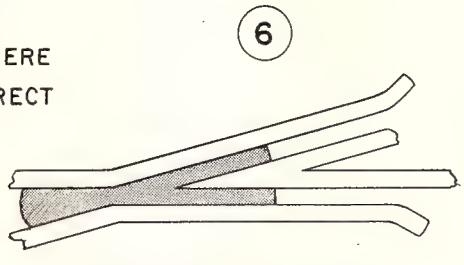
GAUGE TOO WIDE



GAUGE TOO NARROW

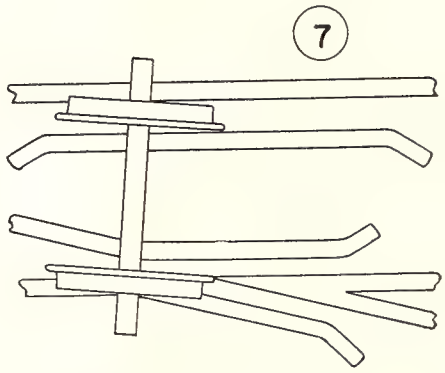


ANGULAR JOINT BAD



FILL UP FROG WITH SOLDER

FILE OUT FLANGE WAYS



GUARD RAIL NOT TIGHT

Bumps along the line are a frequent cause of derailments. A high spike may throw her off, a driblet of solder in a flangeway, an angular joint (*on a curve as fig. 4*) or just a switch. An angular joint can be helped by bending the end of the rail properly with pliers even though the rest of the rail is not bent, but left to assume a nice curve of itself. Keep rails in line at all joints and gaps.

The bumps at a switch need considerable watching. Despite your points being filed down to what you apparently think a feather edge, they still may catch the flange. A slight judicious twisting of the points may help, or filing the base of the stock rail to admit a snugger fit of the points. A small guard rail may be placed ahead of the points to pull the wheels away from them. Better still, flow a small blob of solder as a point guard just ahead of the points as shown in fig. 5. This should not be enough to jolt a passing car, but merely to slide the flange out away from the point. If your points are split, whether the joint be fishplated or not, it is a source of bumping. Make every effort to keep the rails in line; perhaps tighten the fishplate or bend it slightly. The frog on commercial switches will bump for every wheel, so why not fill it with solder, sealing wax or plastic rail of the frog (fig. 8) and there you have it! One trick which I use at times is to cement the guard rail in position at a switch, then carefully push a truck through before the cement has set, thus fitting the guard rail where it will do the most good. The gauge and levelness of track at all places on a switch bears close watching. No doubt, the best switches are those that are all soldered to metal ties on the workbench, although even here the joints may in time come unsoldered.

Spring and pointless switches which are widely used on model car lines need a few special notes. When the points are sprung, the distance they must travel should be as small as possible and the points as short as convenient. Have the points very loose so you can have the spring very weak. Too weak a spring, however, will not return the points, while too tight a spring will derail your lighter cars. To make certain the tie rod does not make too much friction against the bottom of the stock rails, solder the stock rails on either side of the tie rod and pry the stock rails up slightly if the thickness of the ties is not sufficient. Pointless switches (*see M. C., Sept. '43*) should have their "points" filled with solder or something similar and filed out to prevent bumps. Since these are for one-way passage, the flangeways of the desired facing point direction should be made deeper while those for the trailing point can be made shallower since there is no possible alternative route.

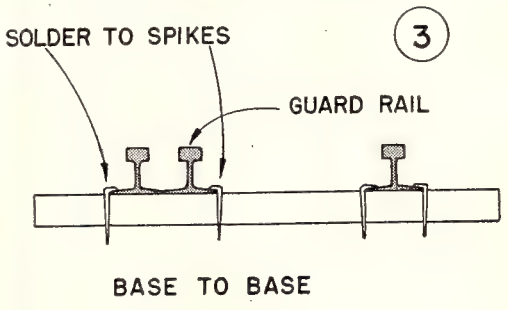
The start and finish on each vertical curve on grades should be watched for derailment causes. The pilot or some other part of a car may snag on the rail or guard rail (*or even the street*) and result in stalling or wrecking the car, as in fig. 9.

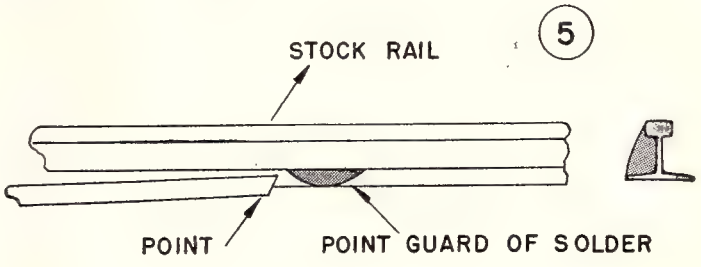
At crossings, high street work or too narrow flangeways should be avoided. The same applies to track in the street. Here, too, if you are using cardboard street as I do, be careful some flangeway is left as the flanges may ride up on the cardboard and at some place go on a little private trip, *taking the car with it!*

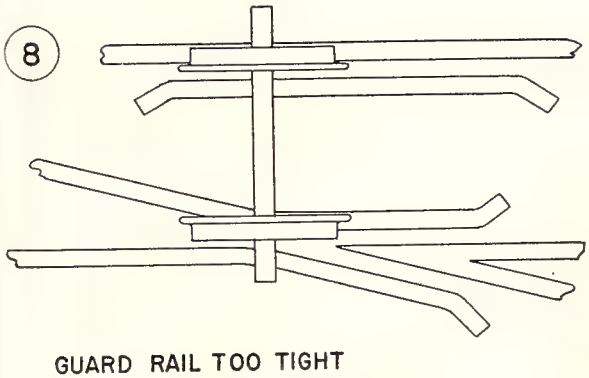
Some derailments are caused by obstructions along the right of way, such as a post too close at a curve. Some cars may clear it, while others with considerable overhang may whack it just enough to cause derailment. A pilot or step may snag on a piece of too protrusive switch rodding or on third rail.

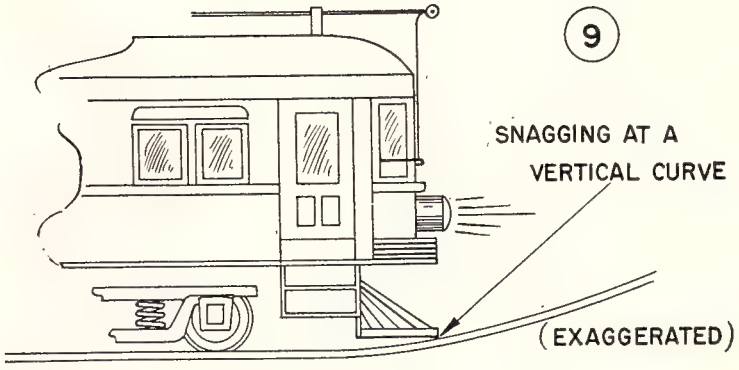
We might add here that occasionally at switches a point will become unsoldered, derailing a car taking a certain line. Once I even had a remote switch point disappear before I knew it was loose. That was quite a bump—*about three inches of rail missing!*

Careful observation of derailments may show no difficulty, in which case look down the line a piece. A car may go off at a tight place in the track without appearing to do so until it hits a certain switch, curve, grade or crossing, where the wandering wheel departs from the track.







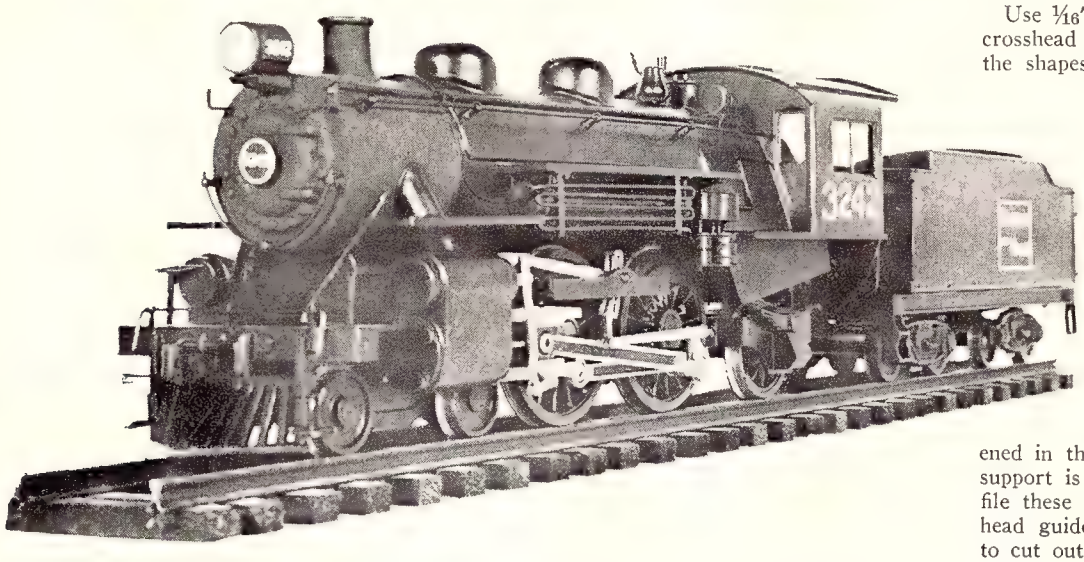


wood as in fig. 6, and then file out the flangeways deep enough so the flanges will carry the wheels over the gaps in the rails. These flangeways may be roughed out by forcing a wheel through while the solder is still molten.

If your guard rail is too loose, the other wheel may stray up the other line's flangeway (fig. 7) or at least pick the frog point and derail. If the guard rail is too close to the running rail (*which is probably at too wide a gauge*), then the other wheel may ride up on the wing

In the case of train operation, the number of derailments is multiplied by more than the number of cars. Individual cars must have their trucks mounted level, but with some *up and down* motion to allow for vertical curves. Couplers must swivel freely enough for even your sharpest curves. The cars should have sufficient weight to get through spring switches. Train operation will be limited by your sharp curves and your steep grades as both of these increase friction immeasurably.

Boston & Maine Atlantic



PART II

By LEWIS AUSTIN

BY THIS time, you should have completed everything described in Part I of this series, so let's start construction on the cylinder block, rods, valve gear and motor mounting. The cylinder block on my model is a casting but it is a simple matter to build up a unit if you cannot get a suitable casting. We shall describe the construction of the built-up cylinder block as shown on the drawing. If you should use a casting, it is merely a matter of altering the block to fit the radius of the smokebox and mount it on the loco frame.

Front and rear of the cylinder block are cut from 1/16" thick sheet brass as indicated on the plan. Drill and file the holes for the steam and valve cylinders. Use brass rod for the steam and valve cylinders and solder them in the holes at the ends of the cylinder block. The block shown in the center of the cylinder block is made from brass and is used to anchor the screws that hold the cylinder block to the loco frame and also to fasten the boiler to the loco chassis. A strip of 1/64" thick sheet brass is soldered around the cylinder block to cover the openings. The flange where the smokebox fits on the cylinder block is cut from 1/16" thick brass and soldered in place. Pipes are made from 5/16" brass tubing and soldered to the cylinder block. Make certain they are mounted at the angle shown on the drawing. The flange where the pipes meet the smokebox are made from 1/64" thick sheet brass and soldered in place on the ends of the pipes. The short sections of the running board are made from 1/16" thick brass and soldered into slots sawed in the pipes.

Crosshead guides are made from 1/8" square brass and are tapered. This taper can be filed and the ends of the guides then filed round. Drill 1/8" holes into the steam cylinders and solder the guides in position in these holes. To complete the cylinder block, drill a 1/16" hole at center of each steam and valve cylinder for the piston rods, and fasten the block to the frame with two 2-56 screws.

Crossheads are sawed and filed to shape from brass. Make certain they slide easily on the guides. Drill a 1/16" hole in the front end of each crosshead into which the 1/16" diameter piston rods are soldered.

Main and side rods are next made from 1/8" brass, drilling the holes in the rods before cutting them to shape. The main rod has a 1/8" hole drilled in the end that fits on the crankpin and a 4-40 hole tapped on the end that is to be fastened to the crosshead. Side rods have a 1/8" hole in either end. Space these holes the *same distance* apart as the axle holes in the loco frame, otherwise the rods will bind. After the holes are drilled, saw and file the rods to shape. Fluting may be done with a hand grinder or lathe milling attachment. Before mounting the rods, make the main crankpins for the rear pair of drivers from 1/8" drill rod. These are threaded 4-40 and screwed into the crankpin holes in the driver. Side rods are fastened to front pair of drivers with 4-40 fillister head screws. Counterbore the holes in the side rods to fit the heads of the screws. Mount side rods and test the chassis by rolling on track or flat surface. If rods bind, they can be loosened by filing the holes in the side rods slightly. *Do not file these holes too large* or the rods will knock and jar the motor, causing it to heat up and stall. When the loco rolls easily without the side rods binding, mount the main rods and check the crossheads for binding. If they bind, file them until they work freely.

File the eccentric cranks from brass to the shape as shown. Drill the 1/8" holes to fit the crankpins and then drill and tap the 0-80 holes in the sides of the cranks. Now saw the slot up to the 1/8" hole with a fine jeweler's saw. The 0-80 screw clamps the eccentric crank to the crankpin. Also drill and tap an 0-80 hole at the end of each eccentric crank to which the valve gear is fastened.

Use 1/16" brass for the link hanger and crosshead guide support, cutting them to the shapes shown on the drawing. The four strips on which the links swing can be soldered together and then filed to shape. Now drill the 1/16" hole through the four pieces and take them apart. The front piece that supports the crosshead guides appears complicated but actually is simple to make. Simply saw and file out the cutouts. The small steps on which the crosshead guides rest do not have to fit the guides snugly. The guides are securely fastened in the cylinder block so any extra support is actually unnecessary. Simply file these steps so they clear the crosshead guides. The back piece is simple to cut out and should not give you any trouble.

Solder the completed parts together making certain the unit is square and there is about 1/8" between the strips that support the links. Now make two angle pieces and solder one to the front end of the assembly and one to the back. Drill 3/32" holes through these angle pieces so the entire assembly can be fastened to the loco frame with 2-56 screws.

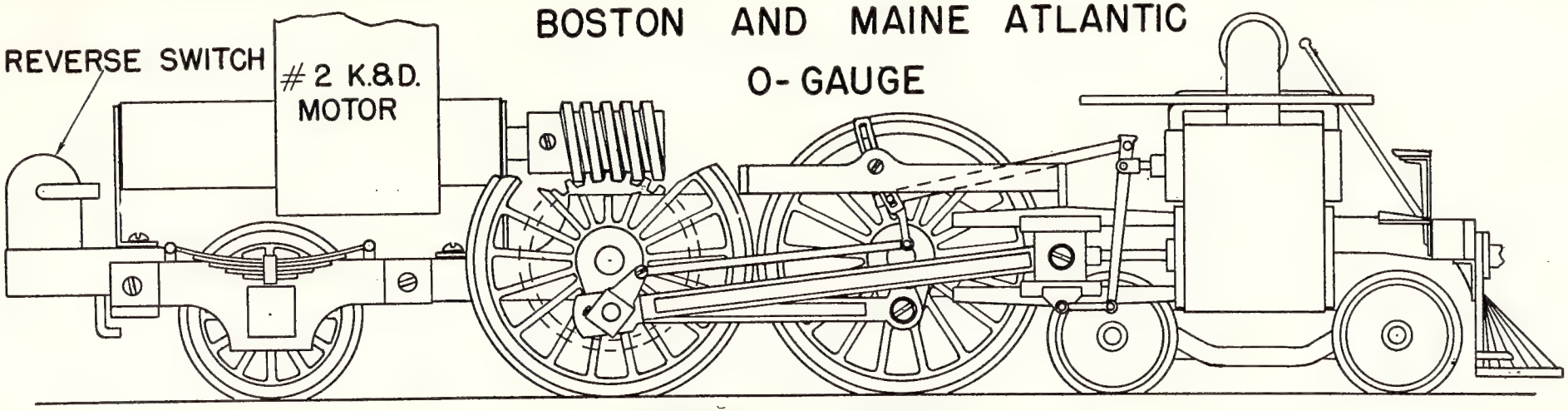
The links are filed to shape from 3/32" thick brass. The slot in the links is strictly optional, but definitely adds to the appearance, this being drilled and filed to proper shape. The links are then fastened to the link hanger with 0-80 screws and nuts.

Valve gear rods and levers are made from 1/32" thick sheet brass. Lay out all parts on the sheet brass and drill the #60 holes for the rivets before cutting out the parts. When through drilling, cut out the parts with shears. The thin parts will probably curl up when being cut, but it is a simple matter to bend them straight again with pliers. It is also possible to saw the pieces out with a fine jeweler's saw to prevent their curling up. File the parts to shape and rivet them together. The valve piston rod is made from 1/16" brass rod with a slot filed in one end to fit the upright valve gear lever to which it is fastened. When riveting together, put paper in between the parts. After the rivet has been crushed, the paper can be removed and the parts will work freely. Assemble the valve gear on one side of the loco and roll it on your bench top to see if anything binds. When you have one side working freely, mount the valve gear on the other side and check in similar manner. In this way, you will know just where to look for the trouble if the mechanism binds.

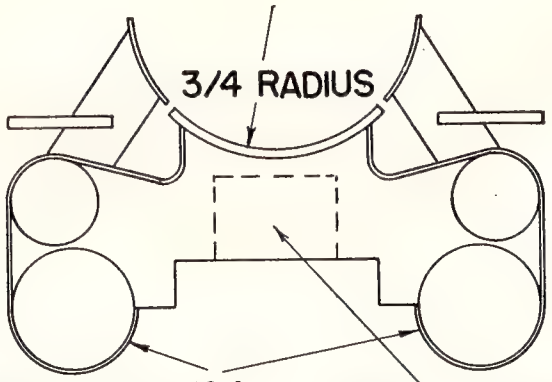
A #2 K&D motor is mounted on two angle brackets shown on the drawing. The rear angle bracket is slotted to per-

(*Continued on page 45*)

BOSTON AND MAINE ATLANTIC
O-GAUGE

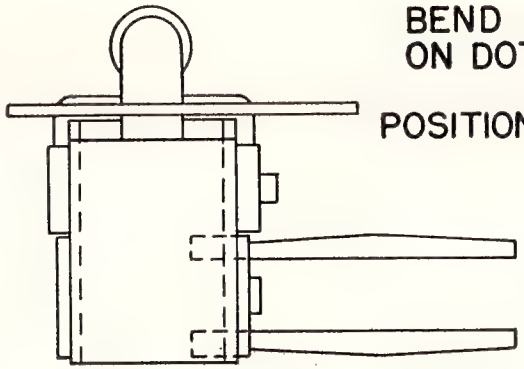


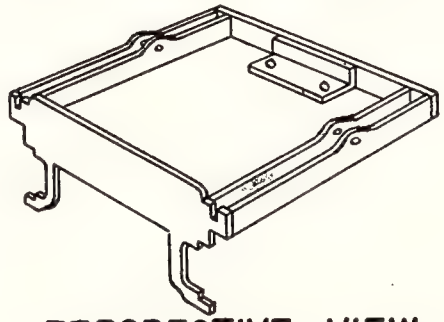
ASSEMBLED CHASSIS



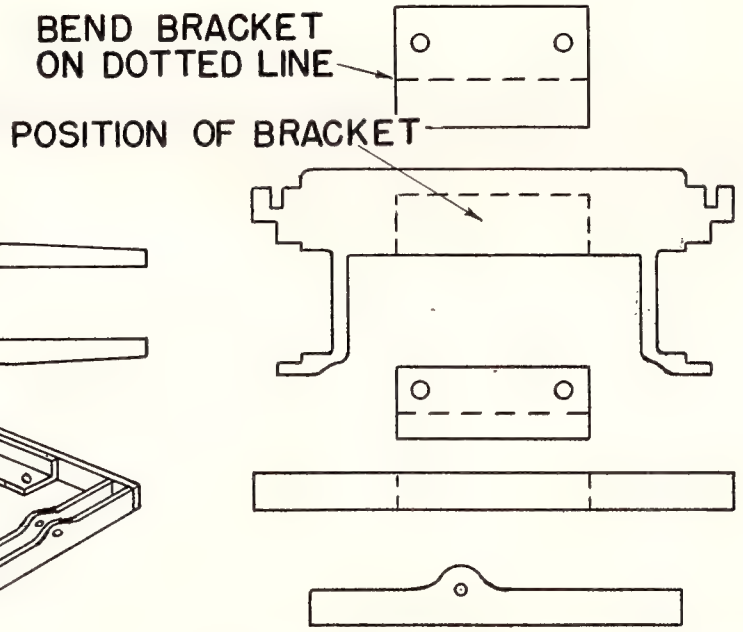
CROSSHEAD

DRAWING IS FULL SIZE FOR O-GAUGE



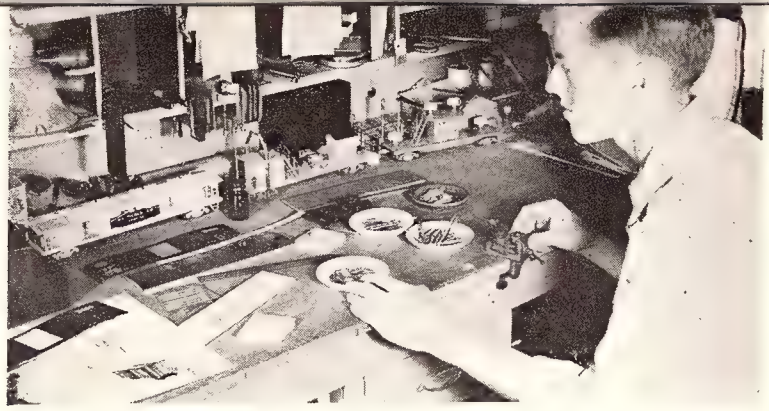


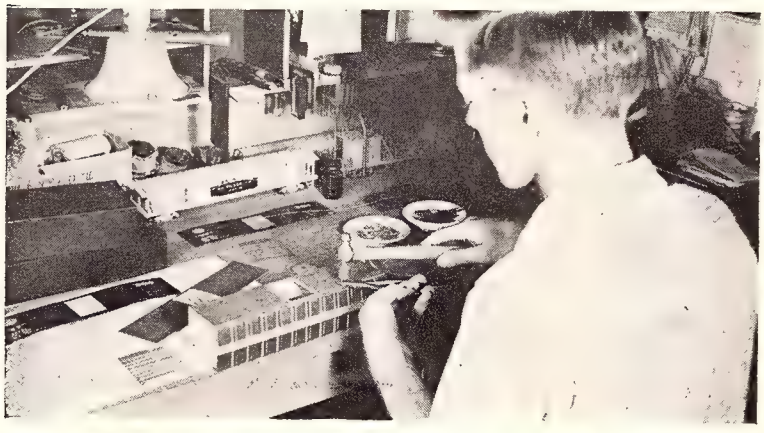
PERSPECTIVE VIEW OF VALVE GEAR HANGER

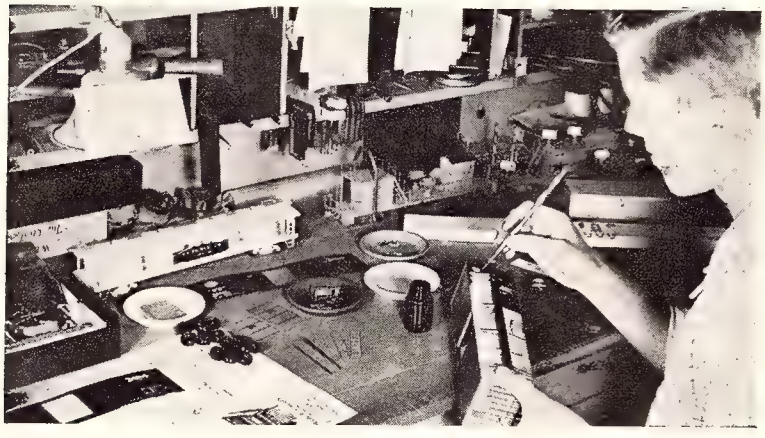


VALVE GEAR HANGER PARTS

L. AUSTIN







Left—Ted Cheesman, teen-aged Channel Club Member, inspects the car kit before starting assembly. Center—Wooden body with sides and roof in place. Metal sides are the last item to be attached. Lower—Painting the metal parts other than the sides which require no painting.

Why not an Overnight Freight

By L. A. BARTHOLOMEW

WHEN anyone thinks of a freight train, it is the general idea that it consists of a hodge podge of freight cars, such as box, gondola, hopper, cattle, refrigerator, flats, oil tank and sugar beet racks. Some are new with shiny paint, some are red and black and even orange colored. A number of them have seen better days, their sides faded and weather beaten. Their wheels may even have flat spots on them, and as they go clanking along you wonder how much longer they will be able to roll without coming apart like the "one horse shay."

But another type of freight train has entered the picture in late years. Confronted with high speed trucking lines, the railroad has developed its answer to this form of competition. This consists of short trains of specially constructed box cars mounted on roller bearing trucks and hauled by powerful high speed passenger locomotives. As these trains roll through the night, very few people see them or know little about them. The Southern Pacific has such a train that goes through the author's home town of Santa Barbara, California, every night at 10:30 p.m.

As a general rule, the train is made up with a S. P. "Daylight" engine, 24 overnight freight cars and a day coach, the coach taking the place of the traditional caboose. The train leaves Los Angeles at 8:05 p.m. and arrives at San Francisco 8:30 a.m. the next morning. Four stops are made en route at Santa Barbara, San Luis Obispo, Salinas and San Jose where switching operations of setting out and adding cars to the consist is performed by a switch engine.

Cars are painted black with yellow heralds and an arrow pointing along the car. Starting out from the station here in Santa Barbara, the oscillating "Mars" headlight is turned on and its powerful ray shines up the track, sweeping from side to side. The bell goes ding, ding, ding, there is a mighty whoosh from the stack, a blast of steam from the booster under the cab, and the train is moving. It picks up speed rapidly, for this is no slow freight hog pulling it, but one of the fastest steam locomotives. It hits the curve on the upgrade three blocks west of the station, and there is a noticeable slackening of the engine's exhaust as the combination of the curve and the running brake test always made by the engineer at this point slows the train a bit. Brakes are released and the exhaust picks up to a rapid bark in the still night air. The speed is constantly accelerated until the freight is running as fast as a passenger train. A wink of the red marker lights on the coach that replaces the caboose and the "Overnight" is gone with its load of hot shot freight.

You, too, can have a S. P. overnight freight on your model railroad empire. It can have rights over your slickest varnish for the "Overnight" must go through. It is not our purpose here to tell you how to build each car from a bunch of scrap material that may take you weeks to gather plus some factory-made hardware for a total cost of $1.98, but rather to take advantage of a manufacturer's investment of several thousand dollars in dies and power tools to create for you an authentic freight car kit that when assembled looks exactly like its big brother prototype.

Such kits are not expensive, are very complete in parts and require very few tools to assemble. The finished car may be turned out in a few hours by simply following the instructions that come with it. Many kits now available are ideal for this purpose, particularly those using a foundation body of wood and ply board to which metal parts are easily attached. When finished, these cars are in effect all metal, for the metal sides have been lithographed the correct color with all lettering and heralds accurately placed. All metal parts that require it have rivet detail punched in by machine. Bank pins and brads attach the metal roof, sides, ends and underframe to the wooden body.

Now let's visit Ted Cheesman, teenage junior member of the Channel Railroad Club and look over his shoulder while he assembles one of the overnight kits. With a nice clean bench to work on and all tools handy, he opens the box in which the kit is packed, takes out the sheet of instructions for assembly. Very

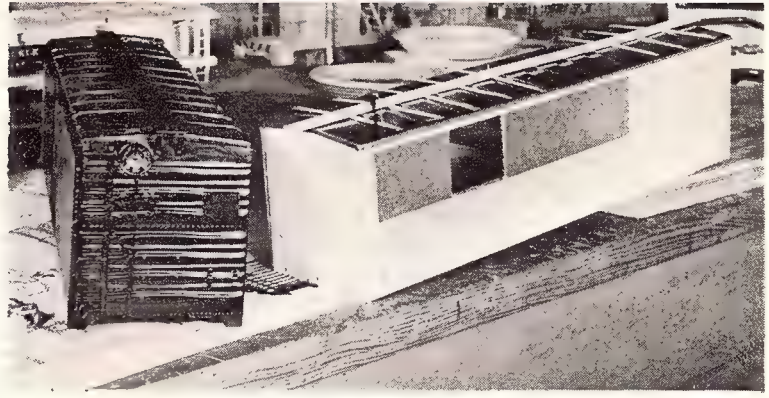
wisely, he places all small pieces such as bank pins, brads and small formed parts in four shallow saucer-like dishes.

He fastens the underframe to the wooden floor of the car with pins, clinching them on the side that will be within the finished car. He then nails the ends to the roof section. Turning it upside down, he puts on the floor to which he has attached the center sill or underframe. A pair of wooden blocks are necessary to lay on the bench for resting the ends of the car body while working on it. These should raise the body from the bench top slightly more than the center sill is high.

Next comes the metal roof and here he does not nail it in place until the ribs and roof walk are in place. The loose parts are held down and a pin or brad started through the roof walk and rib into the wooden roof through holes provided in the metal parts. A gentle tap or two with a light hammer drives the pin home. Repeat until the entire roof walk and all ribs are fastened in place. Now turn the body on its side and bend the ends of the roof ribs over the eaves, fastening them with pins into the wood. The sides are now put on after the doorways have been sawed out with a coping saw. It may be necessary to taper the ends ever so little with a file to allow the metal sides to slip under the turned over edge of the metal end piece. (*In other words, the sides are slightly too thick.*) End pieces are now put on. These are usually made of thin brass and may need a few extra holes put in them for the pins to be forced through. Fasten the ladders in place according to the diagram.

The Ajax brake wheel and housing is attached with a single brad. A wire lead down from the brake wheel to simulate the brake rod, plus another for the air pipe. A gob of solder on this last will do for a valve. The wires go down the end and into the floor of the car where they are anchored. Brake platform and roof walk braces are next, all held in place with pins. With all metal parts in place except the metal sides, painting should be done. A spray job is best but by being careful a creditable job may be done with the brush. Paint furnished with such kits dries very rapidly, so speed is necessary when painting by brush. When the paint is dry, the overnight sides are carefully put on, using care to get them under the end pieces.

Now attach the draft gear (couplers) and fasten on the trucks with the screw provided and your car is ready to roll. A drop of oil on each bearing and it *will* roll freely. A fleet of these cars will make a nice addition to any model railroad of the correct gauge.



Top photo—Car on the left lacks only sides and trucks, while the other car is shown with partly assembled body. Lower—The head end has a fast oil burning steam locomotive.

"New Haven Night" at the N. Y. Society of Model Engineers. Mr. C. M. Hull, Asst. V-President of the N. Y., N. H. & H. R.R. presents one pair of rear marker lights, wrapped in cellophane, to Clark H. Pool, Jr., Society President, while Mr. D. W. Norris (center) New Haven Pub. Relations, looks on. Other officers of the Society (left to right) are George Rafferty, Jerrold Seymann, George Brackmann and Walter Pecan.

Scale Speed and Distance

1 scale mile in ¼" scale = $\frac{5280}{48}$ = 110 ft.

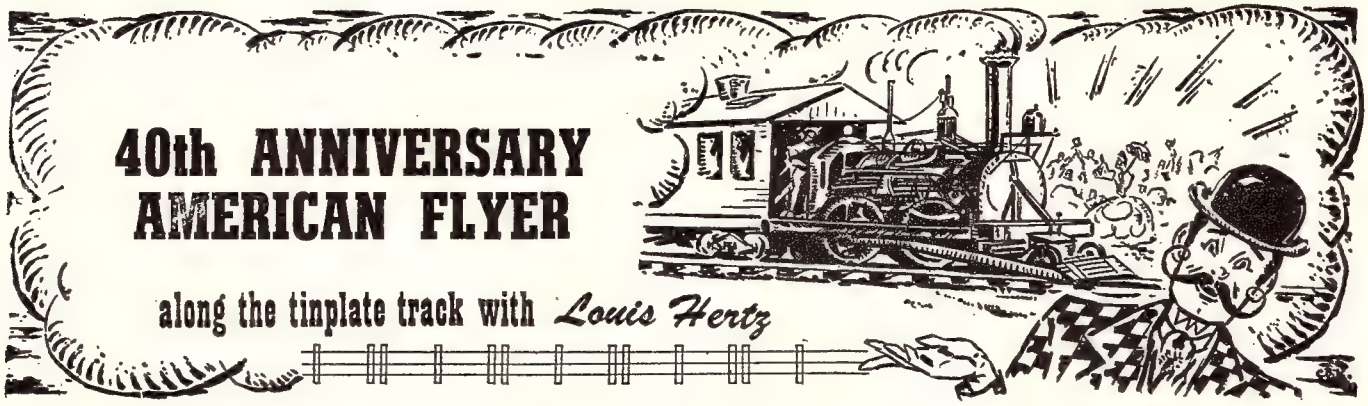
½ scale mile in ¼" scale = $\frac{2640}{48}$ = 55 ft.

¼ scale mile in ¼" scale = $\frac{1320}{48}$ = 27½ ft.

1/11 scale mile in ¼" scale = $\frac{480}{48}$ = 10 ft.

At scale speed, a ¼" scale train should travel as follows:

30 m.p.h. = 110	ft. in	120	seconds
30 m.p.h. = 55	ft. in	60	seconds
30 m.p.h. = 27½	ft. in	30	seconds
30 m.p.h. = 10	ft. in	10.9	seconds
45 m.p.h. = 110	ft. in	80	seconds
45 m.p.h. = 55	ft. in	40	seconds
45 m.p.h. = 27½	ft. in	20	seconds
45 m.p.h. = 10	ft. in	7.27	seconds
60 m.p.h. = 110	ft. in	60	seconds
60 m.p.h. = 55	ft. in	30	seconds
60 m.p.h. = 27½	ft. in	15	seconds
60 m.p.h. = 10	ft. in	5.44	seconds
75 m.p.h. = 110	ft. in	48	seconds
75 m.p.h. = 55	ft. in	24	seconds
75 m.p.h. = 27½	ft. in	12	seconds
75 m.p.h. = 10	ft. in	4.36	seconds
90 m.p.h. = 110	ft. in	40	seconds
90 m.p.h. = 55	ft. in	20	seconds
90 m.p.h. = 27½	ft. in	10	seconds
90 m.p.h. = 10	ft. in	3.63	seconds



TINPLATE fans who are prone to watch for historical **anniversaries of** existing companies, have been noting this present year with some interest as marking forty years of American Flyer trains. Although we have had this in mind for some time, the numerous letters which have called it to our attention only serve to emphasize how incumbent upon us it is to take proper note of the event on these pages.

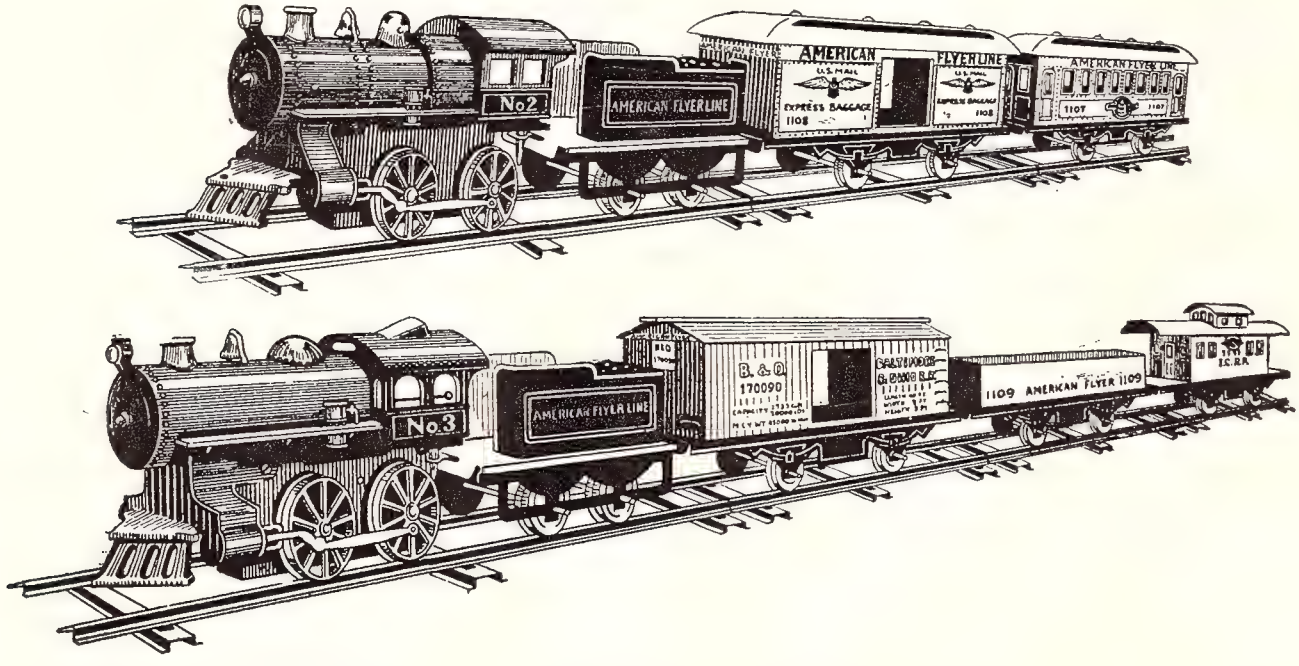
A history of American Flyer since 1907 would perhaps be appropriate for this anniversary, except that this material has already been covered in some little detail in this department, notably in the November and December, 1944, issues. We always prefer to present new material whenever possible, and as nothing substantially new can yet be added to the aforementioned chronicle, we feel that we should let that stand as serving for the anniversary history as well.

Research on American Flyer has progressed a considerable way in another direction, however, and this fortieth anniversary seems the proper time to present this material here. It concerns what has hitherto been a matter of much conjecture, the types and details of the earliest American Flyer locomotives. Lack of more than a handful of actual specimens, catalogs and other relative material has made study in this field rather difficult, and until recently we did not possess sufficient data to formulate and present what we were certain were accurate conclusions. While certain aspects of the subject are still obscure, we feel that the time has come to tell the story as it shapes up to date.

Before going into the intricacies of these early A.F. wind-ups, however, mention should be made of another way in which this fortieth anniversary is being marked. Tinplaters have for some time talked of the possibility of reproducing copies of old catalogs so that numbers of fans might have the benefit of studying and owning such valuable historical material. Up to now, nothing concrete had been done along these lines. Now, however, we are pleased to announce that the initial step has been taken in the complete reproduction, in somewhat reduced size, of a rare 1921 American Flyer catalog folder. This folder was chosen because it not only pictures many of the older mechanical sets, but also the new electric outfits. The man who has thus started the ball rolling is William R. Clapper, 213 Penn Avenue, Troy, Ohio, and he is to be congratulated for his pioneering in the field of historical catalog reproductions. Those who are interested in a copy of this folder should contact Mr. Clapper direct.

Many readers have asked us if we could not illustrate the very first American Flyer loco in this issue, and we have endeavored to comply by printing a picture of the model which all evidence indicates is the initial piece of A. F. motive power, complete with its famous lead wheels. Basically, the engine illustrated is the simplest version of this model and presumably the earliest model of A. F. "No. 1," despite the fact that no catalog is yet known which lists it by number.

There were, however, variations with this same casting. In its more elaborate version, it featured drive rods, brake and hand rails. It would also seem likely that sometime between 1907 and 1911 or thereabouts, there was also some sort of intermediate model or models with perhaps either drive rods or brake (*or*



Two typical American Flyer trains of their second period, taken from the 1916 catalog. Most of their locomotives of this era were variations of the two types shown. The four wheel lithographed freight and passenger cars are characteristic of this period, but with slight changes these same models were continued into the 1930's. Note American Flyer's old trademark, the winged locomotive, on the baggage car.

both) but lacking the handrails. At least to date, this is pure assumption. There were also at least two later models of this locomotive, both with cast iron wheels. One lacked drive rods and brake and had the small No. 3238 tender (*shown in photo*),while the other had brake and rods and was sold with the No. 120 tender (*larger tender shown in the line cuts*). These models were made up to at least 1914, but were discontinued by 1916.

Available evidence indicates that the iron wheels (*these replaced the lead wheels which were really a detriment to the running of the locomotives*) and the No. 120 tender appeared in 1912.

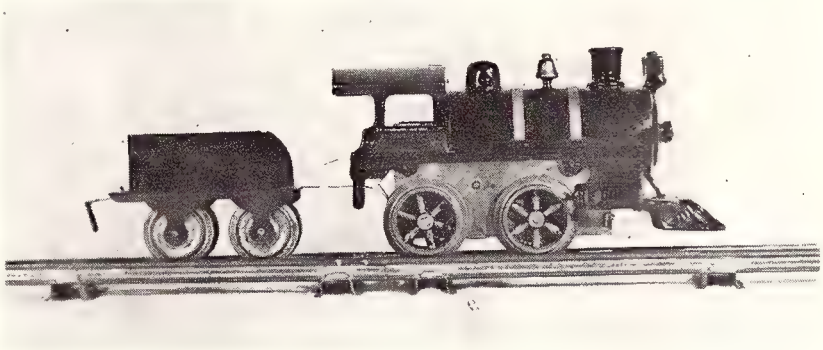
The first type A. F. locomotive illustrated posesses a peculiar feature. Although the casting is "spotted" or indented for holes to hold screws which retain the motor in place, they are not drilled through. Instead, the motor is held in the casting by means of a spring clip device at the rear. The side of this clip can be seen between the rear wheel and the prong for the tender coupling. Another A. F. model, known to date from 1911, has the usual screw arrangement, although the motor frame is stamped for the clip to be attached. Considering that the casting is spotted for screws, it is impossible to tell at this date if the spring clip arrangement predates the screwed-in motors (*assuming that the clip was decided on after the body patterns had been made but before any locomotives were manufactured*) or if it replaced the screw for a year or two between 1907 and 1911, or if the two methods were used interchangeably. There is a locomotive in the Clapper collection with cast iron wheels, bought in 1914, which also has this clip arrangement.

The second A. F. locomotive (*second major size and casting type*) was the No. 12, illustrated at the bottom of page 17 of the Nov. '44 issue. This was a somewhat longer model and had drive rods and a brake. When it was introduced is uncertain, but it was being made in 1911. Seemingly it was called the No. 12 because it was used for the very first time in the No. 12 set. The basic type remained in use for some time and was listed in the 1916 catalog, from which the illustration of the later version with rivet detail on the boiler, cast iron wheels and the No. 120 tender is taken.

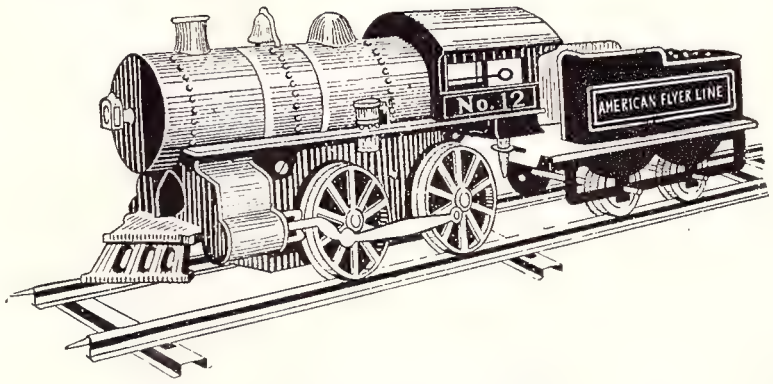
There are illustrations in mail order catalogs of a slightly larger A. F. locomotive around 1911, resembling the No. 12 but with an 0-4-2 wheel arrangement. It is not known if any such model was ever actually manufactured.

The third basic type of A. F. loco was the No. 0, a very small model designed for use in a very cheap set, and resembling more a reduced version of the No. 12 than the stubby "No. 1." A clockwork driven trolley car with cast iron body was also made around 1911 to 1912. The number of the car alone should probably be No. 18X and the catalog indicated it might be run on the floor as well as on track.

These three locos, all of which are distinctive for having wide nickel bands around the boiler, and the trolley, may be considered as comprising the earliest group of A. F. motive power, dating from 1907 to 1912-14. They were gradually replaced by a new series of engines, some of which remained in the line into the early 1920's, and which are more or less typified by the No. 2 and No. 3 locomotives pictured on the two train sets.



As closely as can be ascertained, this is the first locomotive made by American Flyer, dating from the 1907-11 period. Similar models, with the same casting, were made later. The engine shown here features the lead wheels which were such a distinctive feature of the earliest A. F. locomotives.



The No. 12 was the second basic type of locomotive made by American Flyer and general outlines of earlier models are retained in this later version, illustrated in the 1916 catalog. Among other things, the later model is distinguished by the boiler rivet detail.

The locomotives in this series featured cast iron or stamped metal wheels, varying degrees of boiler embellishment and detail and were characterized by the open ventilators which were cast on the cab roofs (*as on loco No. 3*). In actual practice, the engines did not carry their numbers, but were unlettered or simply bore the initials "A. F." on the cab side. There were numerous minor changes in casting, locos with either square cab windows or windows with rounded tops, and with or without the ventilators (*a detail which only American Flyer ever incorporated into their wind-ups*).

The smaller engines were the Nos. 0, 1, 2 & 3. The No. 0 was completely reworked from its earlier version. The larger locos were the No. 13, the No. 12, which was shortly dropped, and the No. 15, the latter being a quite attractive model, some 12" long with tender, and the basis for the first A. F. electric locos in 1918. The No. 13 and No. 15 were pictured in November, '44. The line of wind-ups was simplified after the First World War to comprise only the Nos. 1, 2, 13 & 15.

In the early 1920's, of course, the engines were largely redesigned once again, assuming the general lines which we are familiar with as typical A. F. clockwork locos in the 1920's. The No. 15 was replaced by the No. 16, and in turn, with the No. 28 and it is interesting to note that a No. 12 loco was reintroduced around 1925.

Exact identification as to number of many of these later A. F. wind-ups is made difficult by the fact that numbers were frequently cast into the cab side, but that castings were interchanged and often used on two or more different models, although bearing the same number. The clarification of the different models made during the 1920's and early 1930's will require an article in itself at some future date. The last A. F. wind-ups were made in 1937, the last year that the company was located in Chicago. The clockwork line was dropped by Gilbert after they took over American Flyer.

In the early days of interest in tinplate history, a theory was tentatively advanced by some that it was a safe and steady rule to classify and date A. F. wind-up locos of the era before the series of the 1920's appeared by the shape (*round or square*) and position (*boiler top or boiler front center*) of the headlights. Such a system cannot be sustained however, now that our overall knowledge of these models is somewhat more comprehensive. The headlight

(*Continued on page 44*)

Key System Railway Articulated Cars

By WILLIS L. NYE

WHEN the State of California built the San Francisco Bay Bridge, one of the basic design features were provisions for interurban electric train service between San Francisco and the adjoining East Bay area. The Key System as a transportation facility had operated ferry boats between San Francisco and the East Bay area which was served by electric trains.

When the California Toll Bridge Authority obtained permission from the War Department to build the bridge, it was mandatory that no ferry boat facilities would be maintained. Provisions were made to accommodate electric interurban trains on the lower deck of this great bridge.

Because of the specific construction of this bridge, part cantilever determinate type framed structure and part suspension, it was necessary that every consideration possible be given to the reduction in the live loads which were to be imposed upon the structure. It was obvious that ordinary conventional types of rolling equipment could not be used and comply with these limits.

The Key System was required to investigate the possibility of designing new rolling equipment of lighter weight than is possible in conventional interurban rolling stock. It was decided to design specific equipment to comply with the bridge specifications and not attempt to obtain the same from a car manufacturer.

The builders of these articulated cars were the Bethlehem Steel Company, Steel Car Division. Some parts of the cars were fabricated in the Key System car shops. The cars are of steel and aluminum alloy construction. The aluminum was used wherever possible to save weight, particularly in the secondary parts of the basic car structure. High strength steel sheets and structural members are used when possible to obtain a high strength to weight ratio. The Key System also built some of the cars complete in their own shops and made test runs for one year's time before the formal order for fabrication was given to the car builders.

The weight of each car is approximately forty-five tons. The distribution of the weight is such that the center of gravity is very low although the passengers sit high in relation to the ground.

To save weight, it was necessary to use only three trucks in place of the customary four. The articulation is obtained by means of a hinged vestibule working on a circular bearing track. By means of the articulation it is also possible to obtain a reasonable minimum turning radius which contributes to general performance where turns must be made in limited terminals or loops of trackage at the ends of terminal lines. This makes it possible to completely turn a large train in a moderate land area thus lowering the cost of terminal facilities.

The forward and aft trucks each contain the electric motors. Provision is made for one pantograph to function as a trolley in urban areas and to use the third rail along the bridge right of way.

It is possible to operate the two-car unit from either the forward or aft cab. The controls are identical. Right hand operated controllers are used with a "dead-man's" switch controller arm. Each controller has ten positions of control.

Because of safety considerations, a maximum speed of forty miles per hour is allowable. This is necessary because of the heavily populated areas in which the electric cars operate. On the bridge, the speed of the cars is fifteen miles per hour. Speeds beyond this tend to cause longitudinal vibration in the suspension portion of the bridge structure. The vibration characteristics caused by the operation of the trains on the bridge were unforeseen and unpredictable although such tests were performed.

Standard 440 volts direct current is supplied to each driving motor. The electric current is supplied to the motors by means of a conventional type pantograph trusswork. The pantograph must be lowered because of the limited height clearance on the under deck of the bridge. A pantograph tripper arm automatically lowers the mechanism should the motorman overlook this operation.

On the bridge the third rail system of current supply is used to energize the electric motors. Each truck contains a wiping contact which protrudes from the sides of the truck.

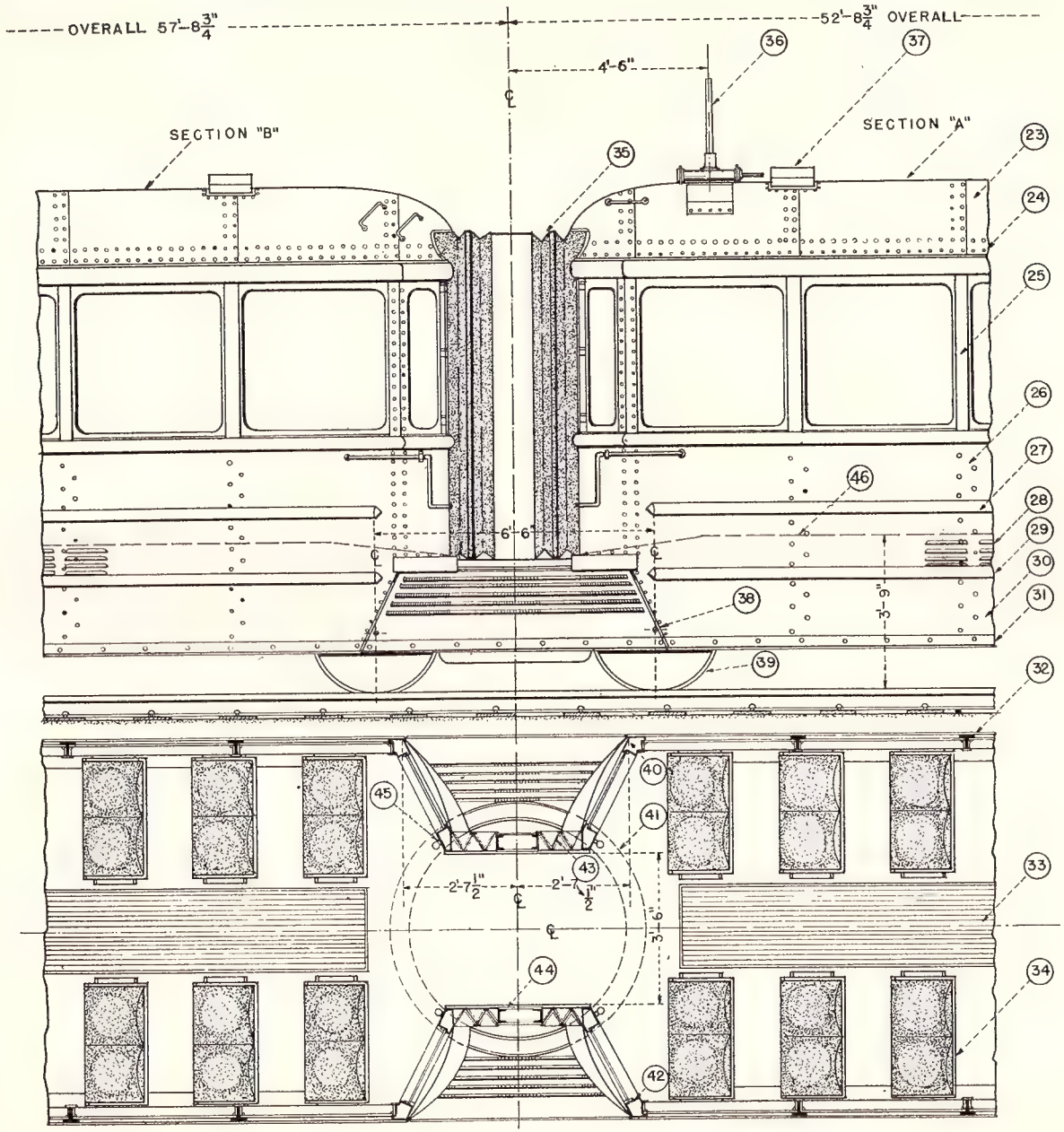
An Ohio Brass Type of automatic coupler is provided on each end of the two-car unit. Special types of contacts, electrically energized, perform the coupling operation automatically as well as providing air supply to the compressed air brake system.

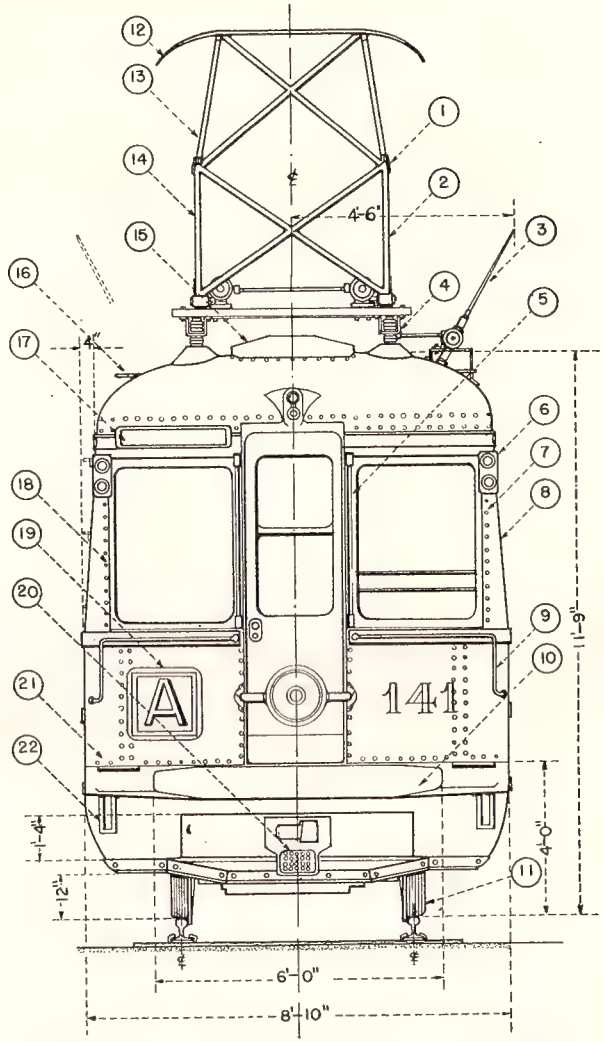
These cars are governed in the operation by means of an automatic signal system and control panel. If the trains travel faster than forty miles per hour, a white light flashes in the cab for fifteen seconds duration to warn the motorman to slow down. If the train continues on faster than forty, it is automatically slowed to a safe speed. Conventional type block signals are used on the line.

The capacity of these two car units is normally 124 persons but with standing passengers, double this number may ride safely. The exit doors are controlled by the forward car conductor, of which there is one for each two car unit. The aft car exit doors are closed and passengers must exit and board from the forward car. An electric signaling system notifies the motorman in the cab when all doors are closed and thus permit the train to move. The exit doors are energized by compressed air actuating cylinders.

In conventional operations, as many as three two car units are coupled together.

1. Pivot joint in pantograph truss structure
2. Lower tube structure of pantograph
3. Pantograph tripper arm (Aluminum painted)
4. Insulator to mount pantograph structure
5. Hand rails (Chromium plated)
6. Electric running lights
7. Riveted corner structural joint (Aluminum)
8. Pressed steel corner structural member
9. Hand rail (Chromium plated)
10. Car bumper (Aluminum painted)
11. Standard 36" diameter railroad car wheel
12. Pantograph contact arm
13. Upper tube structure of pantograph (Alum.)
14. Lower tube structure of pantograph (Alum.)
15. Air ventilator
16. Foot rung
17. Electrically lighted adjustable sign
18. Riveted corner structural joint (Alum.)
19. Adjustable sign holder
20. Ohio Brass Automatic Electric Coupler
21. Riveted Joint
22. Foot step
23. Aluminum alloy sheet roof (Alum. paint)
24. Double riveted joint
25. Stanchion (Aluminum painted)
26. Riveted joint
27. Half round stiffening member and trim
28. Louver type ventilators
29. Half round stiffening member and trim
30. Riveted joint
31. Half round stiffening member
32. Vertical stanchion
33. Ribbed floor panel
34. Steel seat with leather cushions
35. Heavy canvas vestibule covering
36. Pantograph tripper arm, at each car end
37. Ventilator
38. Wheel center
39. Standard 36" diameter wheel
40. Pressed steel corner post
41. Circular bearing track for articulated unit
42. Pressed steel corner post
43. Vestibule accordion member
44. Vestibule framework (Aluminum)
45. Handrail
46. Floor line



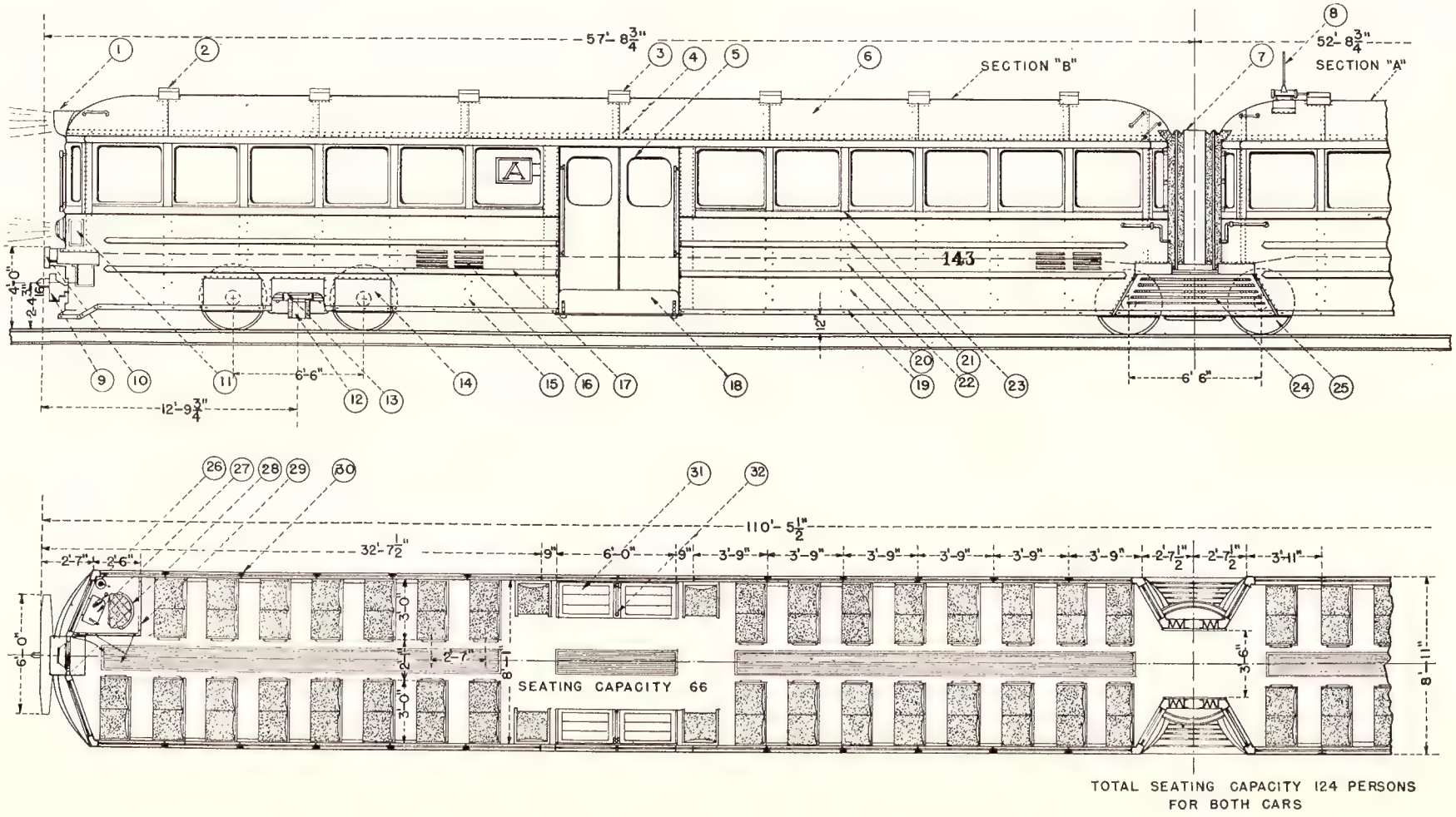


END VIEW, SIDE VIEW, AND PLAN OF ARTICULATED ELECTRIC TRAINS OF KEY SYSTEM RAILWAYS

drawn by

Willis L. Nye

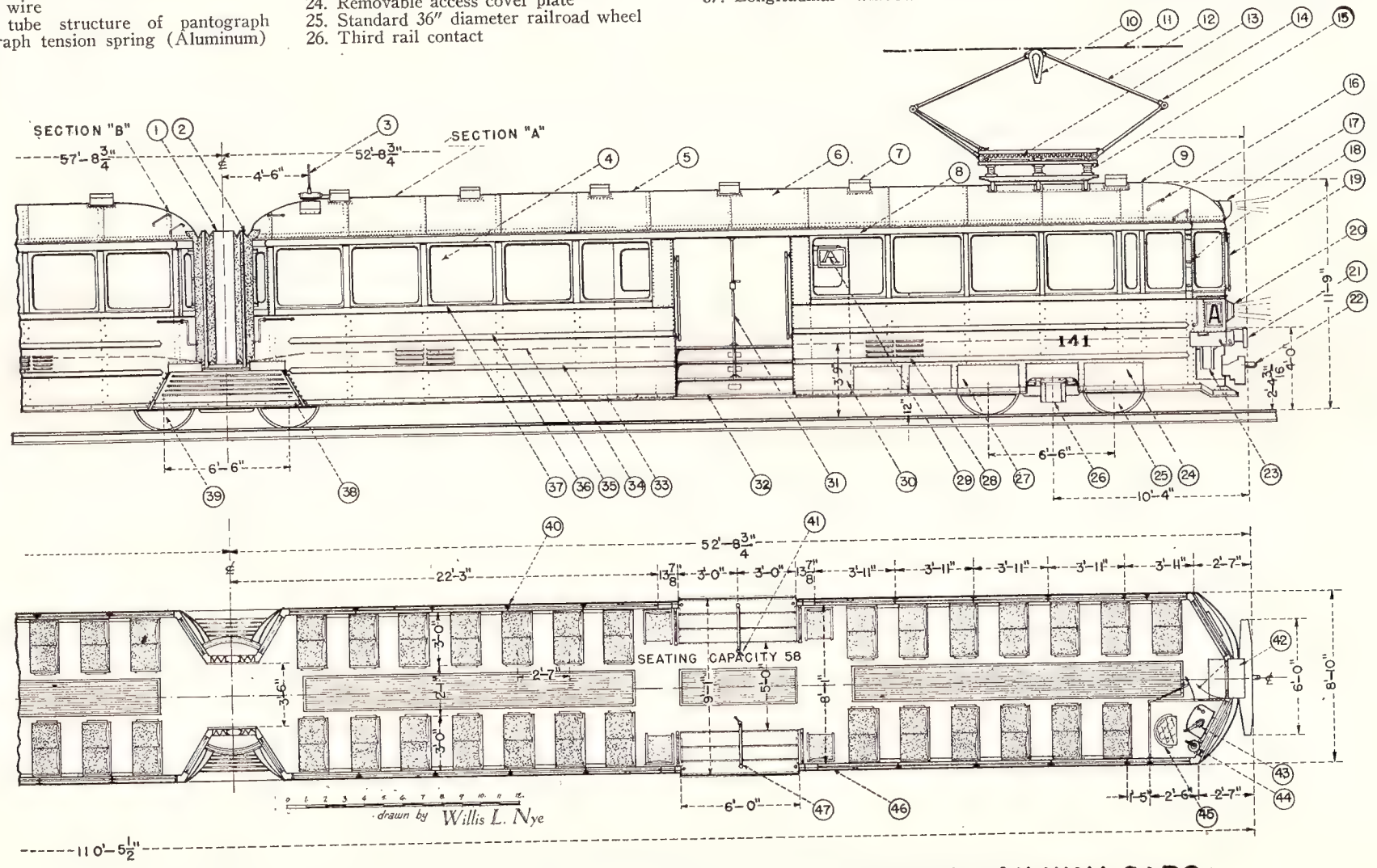
1. Upper running lights
2. Ventilator (Aluminum)
3. Ventilator (Aluminum)
4. Riveted joint
5. Sliding exit-entrance door
6. Aluminum alloy roof (Aluminum)
7. Vestibule framework (Black)
8. Pantograph tripper arm (Aluminum)
9. Ohio Brass type automatic elec. coupler
10. Car bumper (Black top, aluminum sides)
11. Holder for sign (Aluminum)
12. Third rail contact
13. Compression springs
14. Removable access plate (Orange yellow)
15. Steel car body (Orange yellow all cars)
16. Ventilation louvers (Orange yellow)
17. Half round stiffening member (Black)
18. Boarding step in folding position
19. Lower Longitudinal trim member (Black)
20. Riveted joint
21. Half round stiffening member (Black)
22. Steel car body (Orange yellow all cars)
23. Longitudinal window frame (Aluminum)
24. Safety treads on car truck
25. Standard 36-inch diameter railroad wheel
26. Hand operated compressed air brake
27. Controller
28. Chair
29. Cab
30. Stanchion
31. Folding seat
32. Stanchion



✧PART SIDE ELEVATION AND PLAN ✧ KEY SYSTEM RAILWAY CARS✧

drawn by *Willis L. Nye*

1. Vestibule framework
2. Vestibule accordion member
3. Pantograph tripper arm
4. Clear duplate window glass panel
5. Rolled sheet aluminum roof (Alum. paint)
6. Rolled sheet aluminum roof (Alum. paint)
7. Ventilator
8. Pressed steel frame member (Alum. paint)
9. Riveted joint, leakproofed with sealant
10. Pantograph contact arm
11. Trolley wire
12. Upper tube structure of pantograph
13. Pantograph tension spring (Aluminum)
14. Pivot joint in pantograph truss structure
15. Insulator to mount pantograph structure
16. Foot rung
17. Upper running lights
18. Step
19. Vertical hand rail (Chromium painted)
20. Headlight (Chromium painted shell)
21. Car bumper (Black checker plate top)
22. Ohio Brass type automatic coupler
23. Foot step
24. Removable access cover plate
25. Standard 36″ diameter railroad wheel
26. Third rail contact
27. Removable access cover plate (Orange)
28. Ventilation louvers (Orange yellow)
29. Removable electrically lighted car sign
30. Lower side panel (Orange yellow)
31. Chrome plated steel stanchion
32. Folding lower running board
33. Lower longitudinal trim band (Black)
34. Half round stiffening member (Black)
35. Floor line of car
36. Half round stiffening member and trim
37. Longitudinal window frame member
38. Wheel center for articulated wheel truck
39. Standard 36″ diameter railroad wheel
40. Stanchion
41. Pneumatically operated door control valve
42. Two piece hinged steel checker plate
43. Controller
44. Hand operated compressed air brake
45. Chair
46. Space for sliding exit door enclosure
47. Chromium plated stanchion



PART SIDE ELEVATION AND PLAN KEY SYSTEM RAILWAY CARS

Beginner's Steam Engine

An ideal model for the beginner—a single acting unit with half round spring loaded slide valve and center flue boiler with internal firebox.

By C. BLACKSTAFFE

HERE'S a little engine that should prove ideal for either the beginner at model engineering or as a real pastime for the younger generation. The model will burn either alcohol or wood and possibly charcoal although it hasn't been given a trial on this type fuel. It requires dry wood about ⅛" square and careful firing. Most users will do as I finally did, particularly if it's for the other fellow to run or to run indoors. Three of the grate holes were enlarged to admit ¼" wick tubes soldered into the top of a shallow tin fuel tank. One wick will keep enough steam to run the engine at 1000 r.p.m. without load. So efficient is the engine, it will maintain this for at least one hour without adding water, particularly since the boiler has a water-walled fire box and all the heat is collected.

The boiler was built by my two small cousins who own it (*ages only 12 and 13 years*) from an empty metal polish tin with a firebox made from a small size paint can. The flue is the thin brass pump cylinder from a bicycle pump. It is all soldered up and tacked to the base at four places with solder. The photo shows a blower pipe, however this is never used as it drew the flame up the flue and melted the solder at the top, hence not shown on the plan.

Bend up the base from galvanized sheet iron and drill the grate holes. Even for alcohol, the grate should be retained and the tank kept ¼" to ½" away so as to let in air. No safety valve is required as no throttle is fitted and the spring loaded slide valve will lift off its seat and leak away excess steam. *On no condition fit a throttle without a safety valve also!*

This is a close copy of the most popular style small steam engine I believe ever built. The smallest I've seen were 3" x 3" and the largest 10" x 10". They were clean engines, but mean to work on. Normally this would be an extremely hard type to build, but by making it single-acting it is *simplicity personified,* only excelled by the oscillating engine. The base is made of 1/16" brass plate. Outboard bearing is 3/16" and the main, ¼" brass plate.

The frame is a piece of ⅝" bore copper tube, ¾" O. D. The best way to handle it would be to have it 4" longer than necessary. With a piece of ⅝" rod inside the tube, it can be held in the vise by the surplus 4", without marking up the desired piece. Scribe a center line each side and lines 3/16" each side of the same. These are merely guide lines as after all, your eye is your guide. Assume the narrowest part at the top to be about 4" up and the surplus on the top end. This will make it possible to leave a narrow ring at the lower end until near the last to steady it. It is also to advantage to allow the inserted rod to be full length and file this too. Then after one side is taper filed, the insert is given a half turn and acts as guide for filing the other side. The ring may now be filed away and the limbs of the frame annealed by heating red hot and quenching in water. It can then be easily worked around almost with the fingers. Saw off until the ends just butt when it is nicely round and central, each side of the insert. Mount in the lathe by the extra piece and part off. This leaves the end square for seating the cylinder.

The frame is now set horizontally in the vise with the cylinder face against one jaw and the base plate against the other jaw. Line up the frame square all directions and run solder in on the top side. When set, turn over in the vise and repeat on other side.

The main bearing is now filed from ¼" brass to fit inside the frame. Do not drill the shaft hole, but center punch it. Solder in position with the frame and base still held in the vise (*this done to prevent it from falling off suddenly if you should get too much heat*). Run enough solder on to permit filing up to nicely curved fillets, and your friends will want to know where you got the castings. Now, with the base in the drill vise and vertical sideways, drill the bearing hole 7/64" to ream ⅛". This will offset any error in soldering. The outboard bearing may now be drilled the same height and soldered on with a piece of ⅛" steel shaft in to locate it. We can now make the crank disc from ⅞" steel, turning a little collar to rub on the bearing and drilling 7/64", letting only the point of the reamer go through. It will then be a drive-fit on the shaft. Part off the disc ⅛" thick. Drill for 3/32" crank pin, also tight fit. The eccentric is turned from 7/16" steel to fit the strap of the 3/32" brass plate with a ⅜" reamed hole in it. The eccentric is set over 3/32" off center to drill the hole for the crank shaft. Here again, it will be best to only enter the reamer so as to have a tight fit. Friction will then hold it; if not, a spot of solder will.

The flywheel on this model was a lead unit I happened to have from some junked engine. Others won't be so lucky, so the drawing shows a built up flywheel. The rim is first prepared of 2" brass or iron pipe. Drill five equi-distant ⅛" holes through the rim. Turn the hub from ½" brass, leaving about 2" in the chuck. Score a spoke center line around the hub and divide same as the rim and drill holes. Replace in chuck and, holding rim in place, insert bits of ⅛" rod, using same material as rim for the spokes. By the time the last spoke is in place, it will be stiff enough to hold the rim which is now tapped until it runs true. Run solder around both ends of each spoke. Trim off surplus spoke, and with care a skim can be taken off the rim; drill and ream for shaft.

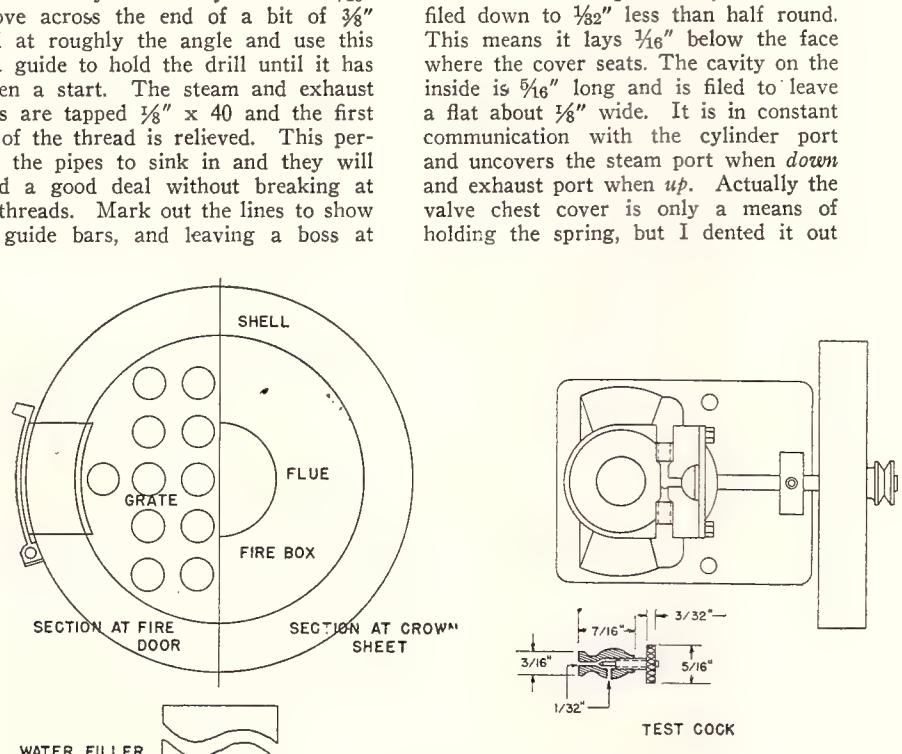
We can now turn our attention to the cylinder, using a block of cast brass not less than ⅞" x 1¼" x 2½". Mark out the cylinder center on the end. Chuck with this center running true and 1½" projecting from chuck. Turn down a length of 1⅜" to a sliding fit in the frame, leaving a little 1/16" rim above same to represent the lower cylinder head. Drill and ream ⅜" directly through.

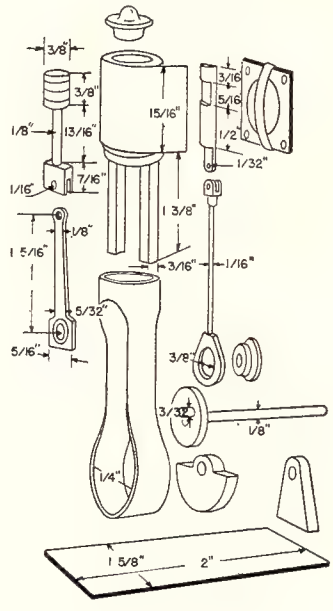
Reverse in chuck and face off to 5/16"

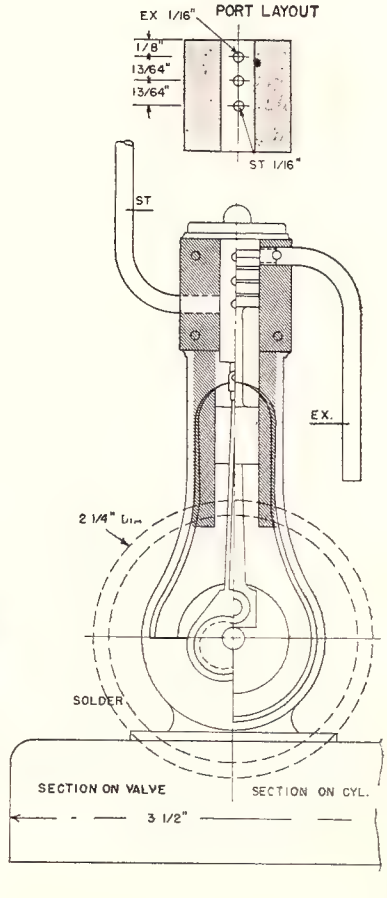
for the main block, leaving a 1/16" raised ring the same as bottom. Mark center of the valve chest; set true to this. Drill and ream for 1/4". Set up in chuck as though you would face off where the valve chest cover goes on and face off to 1/32" less than halfway across the 1/4" valve seat. This will leave a full half-round groove in which the valve can run. Mark out the ports at the distances shown on the port layout elevation. Drill all 1/16". Drill steam and exhaust holes in to meet these and a slanting hole from the cylinder to the center port. This is easily done if you cut a 1/16" groove across the end of a bit of 3/8" steel at roughly the angle and use this as a guide to hold the drill until it has gotten a start. The steam and exhaust holes are tapped 1/8" x 40 and the first 1/8" of the thread is relieved. This permits the pipes to sink in and they will stand a good deal without breaking at the threads. Mark out the lines to show the guide bars, and leaving a boss at the top to fit the frame, saw away each side. File the jacket portion of the cylinder round. The piston can be turned to a perfect working fit, i.e. free but no shake, or can be made from a piece of drill rod if the cylinder is reamed to size. Just turn down for the piston rod, supporting the piston on the tail center. File flat each side or crosshead to thickness of guide. Drill for the wrist pin and run a saw cut up to take the connecting rod. Oil grooves are sufficient seal for pistons this small and there is no friction.

The valve is a piece of 1/4" drill rod filed down to 1/32" less than half round. This means it lays 1/16" below the face where the cover seats. The cavity on the inside is 5/16" long and is filed to leave a flat about 1/8" wide. It is in constant communication with the cylinder port and uncovers the steam port when *down* and exhaust port when *up*. Actually the valve chest cover is only a means of holding the spring, but I dented it out of 3/64" brass with a round head rivet, pressing it into a bushing with a vise. An alternative and pleasing cover is made from 1/16" plate with a recess 1/32" deep, 5/8" diameter, machined in it and painted. In any case, the cover is held on by four 0-80 screws, hex preferred. The spring is a piece of watch main spring 1/8" wide, and is bent over at each end, fitting into two little notches in top and bottom of cover to keep it in the center of valve. It only requires a light pressure to hold the valves to its seat, otherwise its action

(*Continued on page 50*)



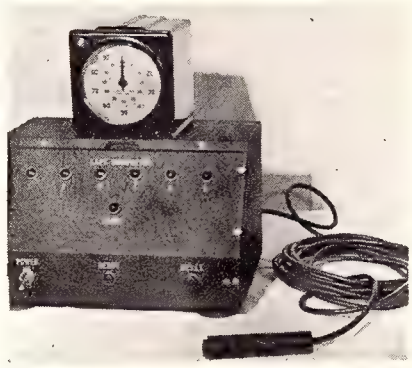




Race Car Timer

Here's a Tried and Proven Unit for Stopping All Arguments When Timing Your Favorite Spindizzy

By HENRY A. McPEEK



Photos by Vernon Miley

AFTER attending several races at which there seemed to be constant arguing regarding the correct time made by a car, we decided to build a timer to be entirely automatic, under control of the man running the car. This timer has since been built and put in operation on the track located in Columbus, Ohio, and is really proving its worth.

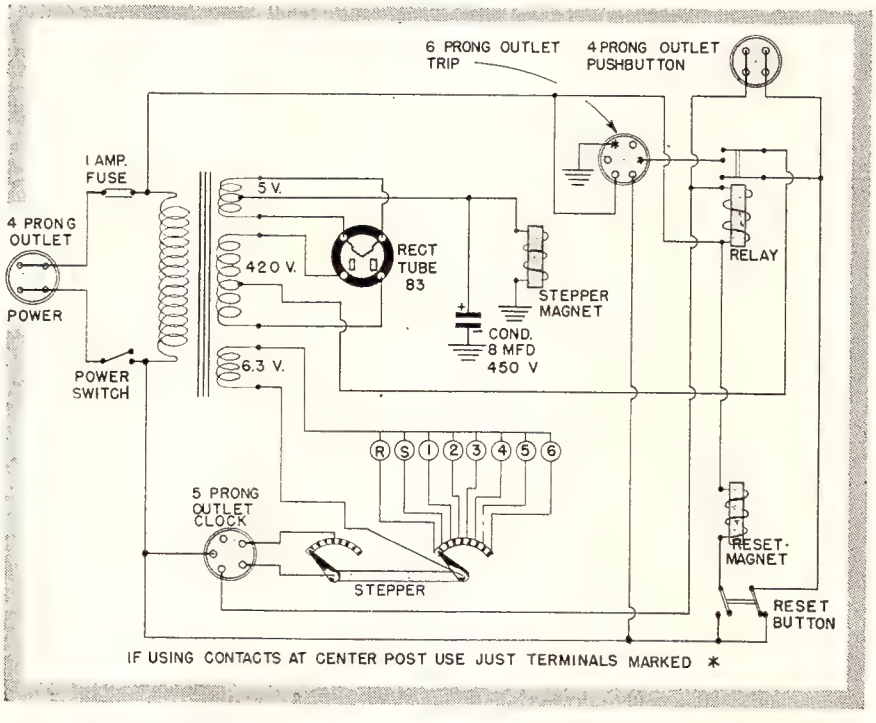
The timer consists of three units, the clock, clock-control and a trip. The trip may be a set of auto points in the center of the track, a microphone or a photo electric cell. The control supplies the current to the electric clock, turning the clock on the first time a car passes the starting point after the operator pushes a button signaling the control that his car is at top speed, counts six laps and turns the clock off at completion of the sixth lap. At the completion of each lap, a light comes on, telling how many laps have been completed.

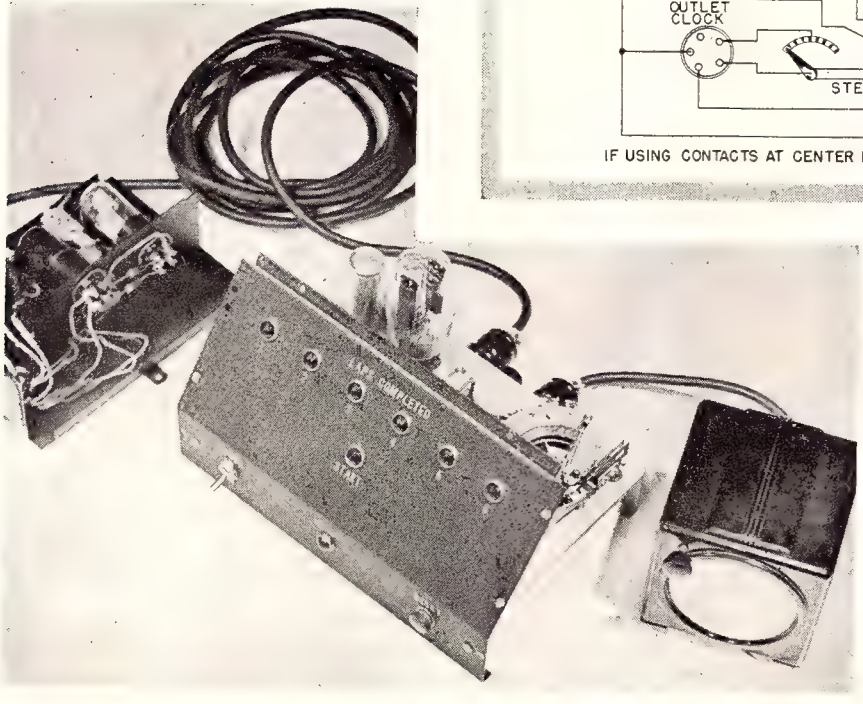
After a car has made its complete run, the control may be set back to normal by pushing the reset button. This does not effect the clock in any way, as it is set back manually after those interested are satisfied as to the correct time made.

All accessories, such as the push button, trip and power line, are plugged into the control with radio plugs of different number of prongs assuring no mixup while setting up the equipment at a race track.

The clock itself was commercially purchased and will give readings to one hundredth of a second. It starts running when power is turned on the control, but the hands do not operate until a clutch, worked by the stepper in the control unit, is operated.

The control is almost entirely built from radio parts that may be purchased at most radio shops. The only part that may be difficult to obtain is the stepper. We had ours made up from telephone equipment modified for use. We placed our equipment in a metal cabinet, mounted on a regular radio chassis, however you may make the layout on a board and obtain identical results. In order to avoid using batteries and as most tracks have commercial power available, we designed the control to be operated on 110 volt A.C. The control furnishes the power to operate the clock and photo-electric cell.





A power pack is built into the control, supplying the high voltage necessary to step up the stepper in the short time that the car breaks the beam of light or breaks the contacts at the center post, depending on the type trip used. By carefully following the diagram, anyone may make the pack without difficulty.

There is a relay operating when the racer, running his car, pushes the push-button on the end of the cord at the track, thus signaling to the control unit that he is ready for time. When this relay operates, it holds up through its own contacts, remaining so until released by the reset button. After the relay pulls up, the push-button may be pressed repeatedly,

(*Continued on page 38*)

LIGHT OR HEAVY?

By BILL DECKER

AT ONE time or another, all of us have the desire to build our own models, starting right from scratch. Often this will require patterns and castings. Aluminum seems to be the most widely used metal for such castings, as it is easily worked and can be readily obtained at most local foundries.

In the process of cutting the pattern for the proposed casting, one often stops to wonder if the resulting casting will be light or too heavy. The author has found the following table very helpful in determining this without having a sample casting made. Due to differences in weights of the same wood, it is to be understood that the figure derived by using the formula is only approximate and should be used only to give the pattern maker a rough idea of what he can expect his casting to weigh.

Pattern Material	Casting Factor
White Pine	5.737
Honduras Mahogany	4.515
Cherry	3.834
Cast Iron	0.346
Aluminum	1.000

For a solid pattern, take the weight of the pattern and multiply it by the Casting Factor found opposite the material used in your pattern. This will tell approximately what your aluminum casting will weigh when you get it from the foundry. You can then add or deduct on the pattern to obtain the desired weight.

Should your pattern require a core, the procedure is the same as above except that you pack the core box with dry sand. Weigh the sand and multiply the result by 1.39. Deduct this result from the weight obtained when figuring your pattern as a solid casting and you will have the weight of your casting with the holes cored out.

Example: Suppose you cut a pattern of White Pine and it weighed two ounces. Multiply the two ounces by the casting factor listed opposite White Pine (5.737). This will give you 11.474 oz. as the weight of your casting in aluminum.

If your pattern contained a cored-out section, you would pack your core box with sand and weigh the sand. Suppose we say the sand weighs 3 ounces. This would then be multiplied by 1.39 which equals 4.17 oz. Deducting 4.17 from 11.474 will give you 7.304 oz. as the finished weight of your cored-out casting in aluminum.

SALINA REPORTS

By JOE ADDISON

BY the time this is in print, the SMRCA of Salina, Kansas, will have held their Labor Day Open Race with complete results to follow in the next issue. At this writing, there is good evidence of a large entry list and a grand time with a good race is indicated. Several of the usual fast and slow cars have changed positions several times in the past month, giving inspiration to many boys who are trying to get de "old iron" into high gear. The State Race was definitely considered a grand success and a report of the speeds follow. Trophies and prizes were received with enthusiasm, indicating satisfaction all around. Several visitors from out of state brought their "wagons", causing a last minute decision by the club to hold a visitor's race. First place only for Spur and Proto were recognized with merchandise awards. Visitors came from Nebraska and Missouri. The Salina Club looks forward to their return for the Labor Day Meet.

SPUR GEAR
(July 13th)

	MPH
Al Goedde	102.97
Roy Goedde	102.97
Floyd King	101.35
Everett Vernon	100.89
Joe Addison	99.66
Corky St. Clair	97.40

PROTO
(July 13th)

Joe Addison	93.16
Bill St. Clair	92.40
Pat Brooke	86.20
Bob Leiker	79.57

SPUR GEAR
(July 20th)

Al Goedde	101.92*
Joe Addison	101.92
Roy Goedde	101.80
Charles Hayes	97.08

* Al Goedde turned 100.11 in run-off

PROTO
(July 20th)

Bill St. Clair	90.45
Joe Addison	89.73
Alan Strout	88.23
Pat Brooke	87.46

SPUR GEAR
(July 27th)

Joe Addison	106.38*
Al Goedde	102.73
Roy Goedde	101.50
Everett Vernon	100.00
Corky St. Clair	98.99

* New Salina Track Record

PROTO
(July 27th)

Bill St. Clair	89.55
Joe Addison	88.32
Lew Woolard	85.30
Bob Leiker	80.93

DENVER RACING ON NEW TRACK

THE Denver M. R. C. A. had a grand opening of its new 1/24th mile cable track on July 6th. Track is located in Englewood in the city park, four blocks west of Broadway on Greenwood Avenue. The Club has incorporated the latest of designs in their track with a combined crash rail and fence, the fence located four feet from outer circumference of the concrete apron. The lower two feet of this fence is made of 2" x 12" lumber, the remaining four feet composed of wire fence. This gives the spectators and operators ample protection. The concrete apron itself is five feet wide, allowing plenty of room for horsing the cars.

The opening day races were directed by a committee of five members appointed by Club President, Lee Zeigler, namely Bill Norberg, Jack Warkins, Gordon Lichtenwalter, Jack Little and Bill Jimerson. The fellows did a fine job and the races went off quite smoothly. The

(*Continued on page 39*)

Let's take a peek at the Long Island set-up during a recent contest. Left—A running account of speeds kept during the meet. E. D. Fitzgerald (left) Score Keeper and John Hoffman, Lineman. Right—View of the pits and work benches. Note the raised end of car to prevent fuel flooding the carburetor.

These are the fellows who competed at the Rail Nationals held at the Chicago-Midwest Model Speedway on Aug. 8th, 9th & 10th.

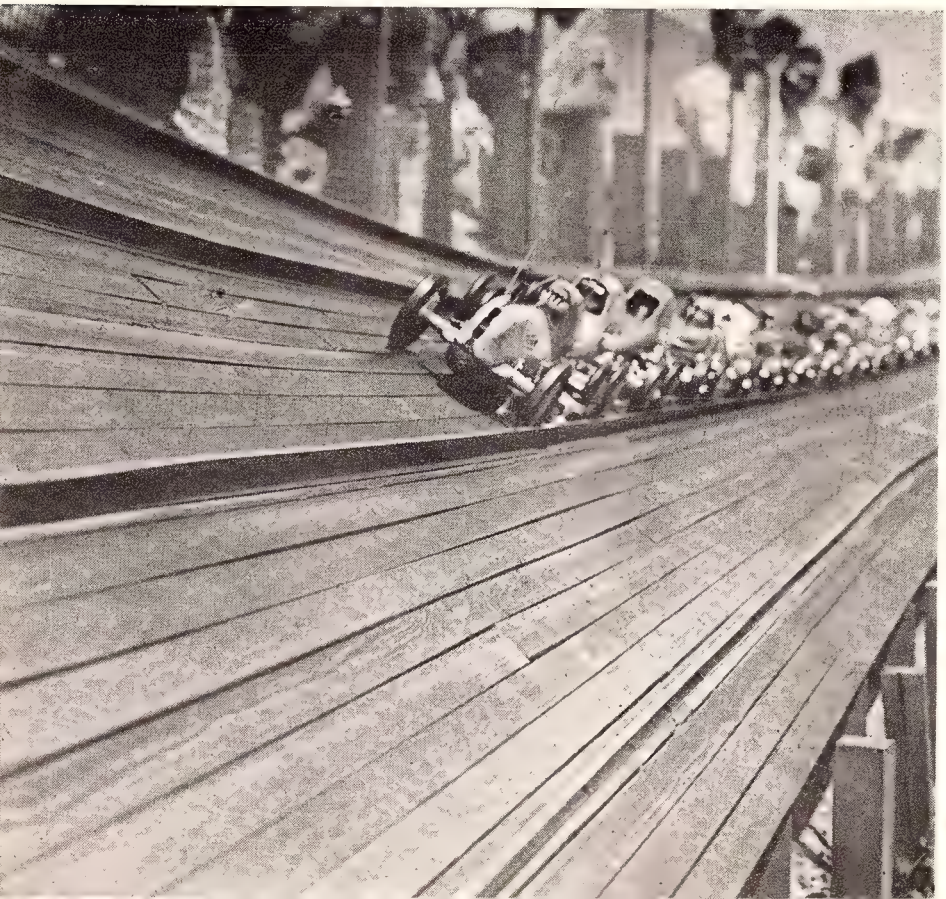
Rail Nationals

New Proto Record Set by Elmer Wheeler at 81.30 MPH

THE 1947 Rail Nationals were marked with a new World's Record in the Proto Class for one-sixteenth mile track. Elmer Wheeler from South Bend sent his McCoy Proto Special, powered with a McCoy Engine, from a flying start for the quarter mile at 11:07—a neat 81.30 MPH!

The Chicago Club was again host to the contestants, the action taking place on the famous Chicago-Midwest Model Speedway, Aug. 8, 9 & 10. Over forty cars entered the field, representing a good number of out-of-town fans. Thirty-three pieces of hardware were passed out and 120 pieces of merchandise, giving everybody a fair share of the prizes. To eliminate the large field of cars, 41 races were run off.

The Chicago Club expresses its thanks to Chicago Wheel & Mfg. Co., makers of the Handee Grinder; Ray Snow of Hornet Motors; Dooling Bros.; Mike Trost Hobby Shop, Chicago, Ill.; M & G, Chicago, Ill.; Herkimer Tool & Model Works, Herkimer, N. Y.; C & R Rubber Products, Hayward, Calif.; Super Cyclone Inc., Glendale, Calif.; X-acto Crescent Products Co., New York; Francisco Lab., San Francisco; Ungar Electric Tool Co., Los Angeles; Nathan B. Smith Mfg., Pasadena; General Battery Co., Cleveland; The Vitamite Co., New York; Mauri Rose of Blue Crown Spark Plug Co.; Sparkey Specialties Co., Chicago; Valvoline Oil Co. of America; Model Electric Co., Asbury, N. Y.; Orr Engines Inc., Lansing, Mich.; Aerocrafters Hobby Shop, Chicago; Champion Spark Plug Co.; Phillips Petroleum Co. of America; Mr. Newport and Mr. R. Mulhall of the CMRCA, for making a success of the Rail Nationals.



QUALIFYING TIME (Proto)

	MPH
Elmer Wheeler	81.30
Frank Pawlikowski	80.29
R. Springfield	77.92
Al Greenwood	73.47
Joedy Laschaivo	73.47
H. Vernon	73.11
J. Zalesky	71.43
Ed. Bogiński	70.59
W. Weller	70.42
R. Ganske	68.91
T. Alongi	67.31
C. Widen	66.62
R. Newport	65.41
R. Staske	63.92
E. Klug	62.76
B. Kufahl	61.02

QUALIFYING TIME (Streamline)

Clyde Rohrer	75.95
L. Barnes	74.63
B. Meskowski	73.83
B. Decker	72.00
E. Koch	71.89
L. Misiowiec	71.77
F. Pawlikowski	69.55
E. Koch	69.23
B. Buratto	65.03
F. Levora	63.88
F. Harvey	63.74
E. Bobowski	56.46
G. Anderson	48.25

These babies saw action at the recent Rail Nationals.

POINT STANDING (Proto)

Car No.		Points
Pawlikowski	3	1160
Wheeler	6	1115
Zalesky	1	1055
Laschaivo	6A	1025
Springfield	15	870
Vernon	7A	850
Greenwood	13	635
Ganske	69	620
Stasche	10	535
Weller	4	450
Widen	11	425
Newport	27	425
Baginski	48	325
Klug	196	320
Alongi	8B	220
Kufahl	13	220

POINT STANDING (Streamline)

Rohrer	41	1150
Meskowski	5	1110
Koch	38A	1050
Bobowski	47	995
Misiowiec	X	875
Barnes	23	695
Koch	38	655
Buratto	22	620
Decker	117	550
Harvey	14	550
Levora	14	525
Anderson	5	510

FINAL FEATURE RACES

(Proto)

Car—Motor

Pawlikowski.....R. F. Special—Hornet
Wheeler .....McCoy Special—McCoy
Zalesky.....D.P. Special—Hornet
Laschaivo.....D.P. Special—Hornet

(Streamliner)

Rohrer .....Richter—Hornet
Meskowski .....Richter—Hornet
Koch .....Decker Special—Hornet
Bobowski.....Pogo Special—Hornet

THRILLS GALORE AT JAX NAVY MEET

THE First Semi-Annual Jax Navy Miniature Race Car Meet started officially July 27th at 1200. Saturday was taken up with preliminary warm-ups and trial runs. Approximately 31 cars were entered and competition was very keen.

Quite a bit of excitement was created by Jack Coppage of Atlanta, Ga., whose McCoy-powered Invader was well on the way to establish a new Proto record. Several watches were on the car at the same time, and unofficial statements were that the car was clocking in the neighborhood of 118 miles per hour when the hook on the cable straightened out and the car left the track! It completely tore down one section of the crash rail and jumped over the judge's stand, bounced off Frank Ironmonger, President of the Jacksonville Club, and then hit another Jacksonville Club member, George Robinson, on the leg. If the car had not been slowed down somewhat by the fence and the glancing blow on Ironmonger's leg, Robinson would have suffered a broken leg.

Several more cars ran off their heats and Pete Smith of Jacksonville was just getting ready to peak when the cable broke, completely demolishing his car. The crash rail stood firm this time! Many compliments were passed on the track itself. Out-of-town visitors gave the track credit for being one of the fastest they have ever seen. It must be remembered that the rail and fence are but temporary arrangements, having been erected just two days prior to the race, including the painting. Some of the fence was put in on the first day of the race. There was a very orderly and cooperative group of spectators, estimated at roughly 2,000. Some observers remained faithful both days, even bringing their lunches to be on hand at all times. An even better show is planned, practically by demand, for the near future. This meet operated under AMRCA Sanction #4707. The boys sincerely appreciate the

(*Continued on page 42*)

WHAT SAY, fellas, how about a little more cooperation with your Regional Directors and relieve the National Secretary just a wee bit! After all, that's what these boys were elected for, to act as your contact man with headquarters, handle your complaints, "go to bat" for you when things go wrong, etc. This also includes the handling of your AMRCA applications. Don't hesitate asking their advice or giving them your problems. That's why we have these Regional Directors. Let's take advantage of them!

No doubt you're all familiar with their names, addresses and territory, but to those of you who are not acquanited with them, we are listing them here:

DIRECTOR-AT-LARGE
for RAIL TRACKS

James T. Thompson
1922 South 61st Court
Cicero, Illinois

DIRECTOR-AT-LARGE
for CABLE TRACKS

R. D. Mulhall
1 Carver Terrace
Tuckahoe 7, N. Y.

REGIONAL DIRECTORS

NORTHEAST:

Stanley Prussian
75 Willard Rd.
Brookline, Mass.

SOUTHEAST:

Henry Milstrey
211 East Adams St.
Jacksonville, Florida

WEST CENTRAL:

John Mayfield
2011 North Ave.
Waukegan, Ill.

EASTERN:

J. G. Beard
211 Homestead Ave.
Haddonfield, N. J.

EAST CENTRAL:

Kenneth Held
14466 Eastburn Ave.
Detroit, Michigan

SOUTHWEST:

Fran Brennan
515 Quachita Ave.
Monroe, Louisiana

MOUNTAIN:

Joseph W. Addison
302 South College
Salina, Kansas

PACIFIC:

Tony Aguilar
125 E. Foothill St.
Azusa, Calif.

Home track of the "Navy Flywheels" Naval Air Training Station, Jacksonville, Fla.

Racing these hot babies is not limited to the U. S. This photo was taken in Johannesburg, South Africa, showing a group of fans and their cars.

WASHINGTON SPEAKS

WE, like the Atlanta Club, have also learned the hard way that a plain wooden crash fence is not satisfactory. A proven (*by two mishaps!*) addition to our wooden fence is now in place. By nailing one inch thick strips vertically every four feet around the inside and stapling welded steel fencing the same height as the wooden fence to these strips appears to provide a positive means of stopping the cars. The wooden fence still serves the purpose of preventing small parts from coming in contact with spectators. An eight inch board, laid flat on top of the wooden fence and projecting over the track eliminates the possibility of cars bouncing over the crash fence.

The one remaining item necessary to complete our track equipment has finally arrived, the electric timer! At present it is operated by a micro-switch, mounted on the center post and actuated by a cam on the cable. Positive operation and simplicity of installation are very definite advantages when compared to the photo-electric cell set-up.

One of the original and still one of the most active members of the Washington Club is Paul Schlosser, who by profession is a jeweler. He began his model car racing back in 1941 with an Atwood Car powered with an Atwood engine. To our knowledge, Paul has yet to win a first place, either locally or out of town, but we know of no other individual who gets more pleasure from the hobby. We still believe that he may be one to be watched as he is the owner of a number of good cars as well as a complete basement machine shop. With such fine assets, the law of averages should soon catch up with him.

Considerable progress has been made in the planning for the Open Meet scheduled for September 28th. The Club is already in possession of a number of trophies and more have been promised or ordered. The minimum goal of at least ten trophies in each class has now been assured. For inquiries regarding this meet—hotel reservations, proxy cars, etc., write to R. E. Kirwan, 1219 Wisconsin Ave., N.W., Washington, D. C.

NEW TRACK IN YOUNGSTOWN

AN Inaugural Meet was held August 3rd at the new track of the Youngstown Miniature Race Car Club. The track is located on Leonard Schietz's farm, one-half mile north of Canfield, Ohio, on U. S. 62 and State Route 46. The boys have an ideal setup, with 58 acres of land, plenty of parking space with refreshment stand, timer house, enclosed pit and everything painted up snow white! Results of their first meet follow:

PROTO

	MPH
B. Miller, Cleveland	90.72
Jack Yarger, Akron	89.73
Guy Rilhard, Akron	89.19
Walter Werntz, Cleveland	88.14
Clarence Dunlop, Cleveland	85.62
Joe Slinkand, Akron	84.26
Earl Lemley, East Liverpool	83.72
Jim McPherson, Cleveland	83.64
William McPherson, Cleveland	82.26
Gene Brown, Youngstown	82.19
S. Sahol, Akron	79.43
Hal Schultz, Youngstown	77.92

SPUR GEAR

Julius Dombo, Cleveland	95.94
Leroy Lehner, Youngstown	95.44
Joe Slinkand, Akron	94.73
John Bischoff, Sharon, Pa.	94.43
Walter Werntz, Cleveland	93.94
Pete Anzwins, Youngstown	92.49
William McPherson, Cleveland	90.27
Ray Hunter, Cleveland	90.00

HOT ROD

Leroy Lehner, Youngstown	81.52
Clarence Howington, Akron	81.44
Bill Walker, Akron	77.58

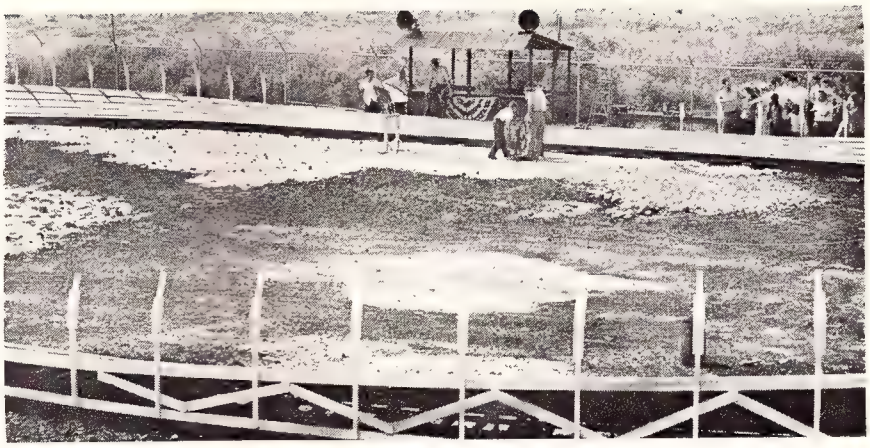
Photo by Hal Schultz

Group of racers at the Youngstown Inaugural Race. Front—E. Lemley, W. Werntz, J. Dombo, J. Slinkand, L. Schutz (President & owner of track), G. Richard, J. Birchoff, L. Lehner, R. Thomas, J. McPherson, Wm. McPherson. Back row—H. Schultz, P. Anzivino, B. Williams, C. Dunlop, C. Howington, B. Miller, G. Brown, B. Sick.

ATTENTION CLUBS!

THIS is *your* race car section. These pages are intended to cover all your activities, both regular and featured races. But we are limited on these pages by the amount of news material and photos received from you. All material sent in, although edited, is printed and receives its share of these pages. No favoritism is shown to any one particular section of the country. Where there is an apparent abundance of news from one locality dominating an issue, it is only because the Clubs from this section have cooperated and sent in their material while other Clubs have not. This is more reason for you other Clubs to get busy and work. Show the other guy what you're doing!

Appoint a Secretary of Publicity, one who will be responsible each month for sending in *complete* reports of your races and other news items. When reporting race results, please include the individual name, his car and motor and also speed. This is important. Our deadline is the tenth of the month preceding date of publication. Take advantage of this medium. Place your Club name in print before the race car world. It's all to your advantage!



This is Philadelphia's new rail track, built to Dooling Brothers plans by Bill Yocum. Cars are run every Sunday afternoon.

RAIL TRACK OPENS IN EAST

JUST a few months ago we announced that Philadelphia was to have an honest-to-goodness rail track, just as soon as materials became available. Well, this track has now been completed, cars were rolling about the first of August.

Many Eastern Rail fans have long waited for this type of track, but no progress was made until Bill Yocum went to work and built this rail track as a commercial venture, Bill really deserves credit.

The track is located at the Philadelphia Southwest Municipal Airport and there is also a new 70 foot cable track adjacent to it. The rail track was built from Dooling Brothers plans and has a masonite surface with stainless steel rails.

Bill needs cars every Sunday afternoon, all races are run according to AMRCA rules, point system scoring. Prizes are given for the first three places. Anyone with a rail car is cordially invited to test the track, and remember its fairly easy to convert your cable cars.

We have received word that the track is extremely popular, and that the spectators really enjoy the show. As this is the first rail track for the East since before the war, why not give it a whirl?

"PHILLY" MEET

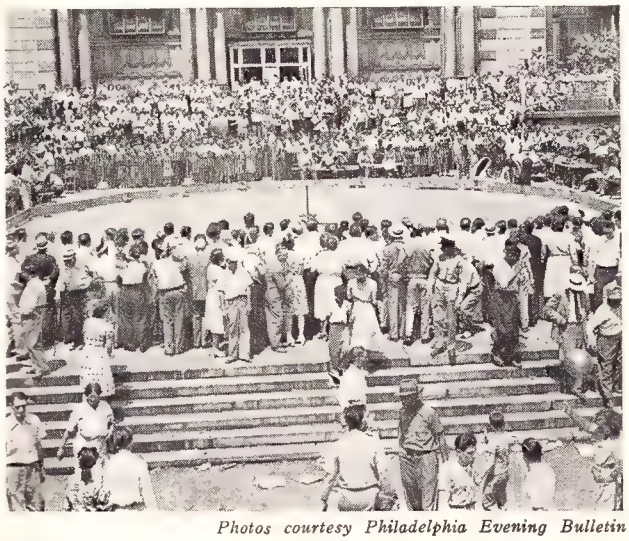
THE Philadelphia Model Race Car Club held a very successful meet for its members last July 4th. This meet was a part of the mammoth celebration staged by the Philadelphia Evening Bulletin. Model Race Cars, Airplanes and Boats all performed for a tremendous crowd, a total of 800,000 persons throughout the day.

A temporary cable track was set up on a cement plaza in Fairmount Park, one of Philadelphia's largest. No good times were turned in due to the small circle and r-o-u-g-h concrete! The majority of the cars suffered considerable damage and one spur job made a series of complete somersaults. As such a large crowd witnessed the races, the club members felt well rewarded even though it was a costly show.

Many prizes were donated by the Philadelphia Evening Bulletin and all contestents received a trophy.

Plans for next year are already underway and should prove to be even a bigger event. A temporary board surface is expected to be laid and in a larger circle so that the cars can perform better and not suffer damage.

This Philadelphia gang is really going places. It boasts of 45 members and still growing fast. Any persons in this area interested in racing are invited to get in touch with the secretary and actively participate in this thrilling sport. The club secretary is Dick Setford, First Ave. and Gilbert St., Larchmont, Penna.



Photos courtesy Philadelphia Evening Bulletin

Part of the crowd that witnessed the Philadelphia Club's July 4th meet. Get a load of that coarse running surface and you can understand what the boys were up against. On the left is a group of the trophy winners. Nice show fellas!

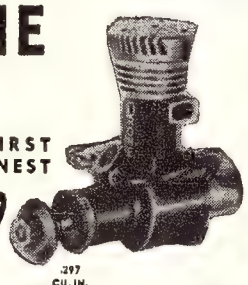
A WORLD'S RECORD
AT NEW YORK'S MADISON SQ. GARDEN
14,000 LAPS IN 128 FLIGHTS

DRONE B GOLD CROWN
REVOLUTIONIZES FLYING & FLYING WEIGHT

diesel DESIGN SAVES 6 OZS. deadweight BURDEN

SPARK PLUG	.3 oz.	NO
COIL	2.2 oz.	NO
BATTERY	2.1 oz.	NO
CONDENSER	.4 oz.	NO
SWITCH	.5 oz.	NO
BATTERY HOLDER	.2 oz.	NO
WIRES	.3 oz.	NO

DRONE B
AMERICA'S FIRST
AMERICA'S FINEST



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DRONE Engineering, Inc.
125 BROAD STREET, ELIZABETH, N. J.

RACE CAR TIMER

(*Continued from page 32*)

with absolutely no effect. This relay is a double-pole, single-throw type, with a 110 volt A.C. coil. The relay supplies the current to the relay in the photo-electric trip or the contacts at the center post as the case may be. This current is used to *step* up the stepper through the rectifier tube.

The stepper may be made out of any commercial stepper available having seven or more positions to it. If lights are wanted, it should have two banks of contacts. The first six steps are strapped together and go to the lead of the clock clutch. When the stepper steps to first position, the clutch operates the starting of the clock hands. The clutch will remain operated until the stepper steps off the sixth position.

Lamps which indicate the completed laps are operated from a separate bank of contacts on the stepper. The *start light* is worked from contact one, *lap number one light* from contact two, etc. The *ready light* is operated from contacts made when the stepper is in normal position.

The reset button has "break before make" contacts so the power is taken off from the clock by release of the relay before the stepper releases. This keeps the clock from registering further time when the stepper returns back over the contacts during the release.

As a point of information for the man who contemplates building such a unit as this, the author has built up several steppers and those interested in securing one may contact him through the magazine. This should save considerable time and help you get a timer installed for an early race!

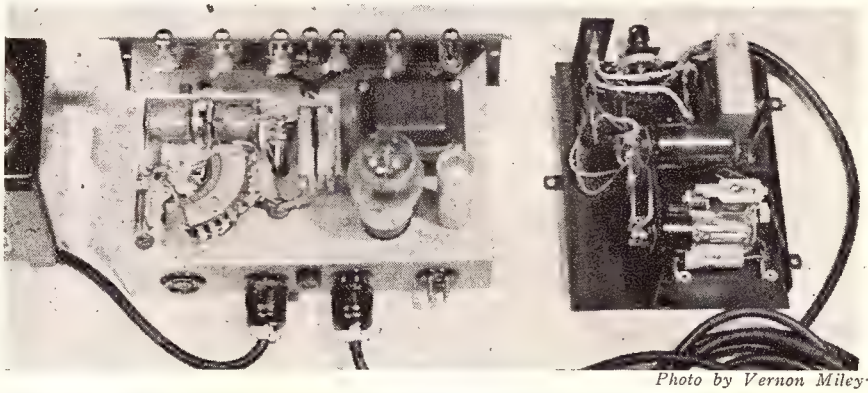

Photo by Vernon Miley

TRI-CITIES CLUB REALLY COOKING!

By DAVE REED

THE Tri-Cities Club of Endicott, N. Y., is now beginning to cook on all four burners, holding their open meet August 24th. Results will follow in the next issue. Many of the fellows have been out limbering up their cars, or just getting acquainted with them and their speeds show that there is some promise of a real *hot* club after all. So far, not a single car is running under 80 MPH. Many of their new members are old airplane men and have much to straighten out before they hit their stride. Dick Bell has had his family of cars all out for their exercise and I might add that they exercise darn fast too! One car in particular owned by Dick has taken my fancy. It is an old car which Dick built back in 1936. The body is all hammered out of furniture steel and soldered up just like you would go about to build a real race

FUELS

"POWER MIST"
"SPITFIRE"
"BLUE BLAZER"

The original miniature engine fuels.
Chemically treated castor oils and alcohols.
16 years of continuous testing
"No gas and petroleum oil mixes."
Supercharged and fortified castor oils.
61 official world records.
Demanded by professional racers.

FUEL FACTS AND FORMULAS: How to determine the correct fuel. Full information and literature—at your dealer, or send stamped addressed envelope.

FRANCISCO LABORATORIES
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car. The car is fully sprung and is at home on a rough track. Oddly enough, the name for this car is perfect—*Destry.* Remember Destry Rides Again? The family feud between Ralph and Ollie Hendrickson is still on and the winner is yet to be decided because they are both running in the same category. So it looks like a lively time will be had deciding which of those two is the best man. So far all the cars that have been running have been Protos, but it now looks as though several Spurs will be coming out.

A bunch of the fellows went down to the opening race at the new Bethlem track, coming back saying they had one swell time and that the track is really s-m-o-o-t-h! The track was not completely finished when they were there but when it's completed, they say it will be hard to beat here in the East.

Our little man of the club, Jesse Jayne (*not James*), has had the fire department down to the track lately to help put out the fires he seems to get in his Proto. *We think it is those super-duper batteries he made up.* Our female member, Retha Stanton, got her new Invader about a month ago and knocked out a quick 83 per, but since then nothing has been happening in her department. Art Myers, Don Buffington, Carl Cerwonka and Harry Loveless are all in there riding the stop watches just about at the same mark. When this contest is pulled, I'll bet my bottom dollar that more than once there will be a tie for some place. We have about twelve cars running all between 80 and 90 per, so you can see what I mean.

An open invitation is extended to all who are running the cars to stop in for a run and spill a little chin music with them about their hobby. You can find them every Sunday at the track, located at the Tri-Cities Airport, Endicott, N. Y., on Route 17C.

JACKSONVILLE CLUB COMPLETES TRACK

THE newly reorganized Race Car Club of Jacksonville, Fla., has just completed their new 70-ft. cable track and think it's just about one of the finest to be found anywhere. In fact, the boys are really looking forward to breaking some records there in the near future. (*More power to you!*)

New officers have been elected as follows: President, Frank Ironmonger; Vice-President, C. M. Johnston; Secretary, M. B. Ogden, Jr.; Treasurer, Bill Robinson; Referee, Clyde Horne.

An AMRCA sanctioned meet is being planned for some time in September or October, so keep your eyes peeled for the big race.

NEW TRACK FOR DENVER

(*Continued from page 33*)

Club's public address system was used to good advantage and many of the spectators' questions were answered by announcer Bill Norberg. An entry fee of $1.00 was charged at this opening event

Good Reasons For GREAT RECORDS

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$35.00 MODEL "60-A"

for guide line or free-flying planes. Model "60-B" for boats. Model "60-RC" for race cars.

These are a few of many HORNET records

● Spur Gear Record, Waukegan, Ill., Sept. 1, John Crossan, V car Hornet powered, 118.27; Dale Martel, Proto Hornet powered, 113.21; Loose Memorial, Fred Luning, Spur Gear Hornet powered, 118.73; W. T. Thomas, Jr., New Spur Gear Record, Own Car, Hornet powered, at Eustis, Florida, 120.32.

● Speed Boats: Joe May, Detroit, Mich., July 4-6, 1946, new world record in Class D and E, speed 65.53 m.p.h., winning Gar Wood trophy and Model Craftsman plaque.

If your local hobby dealer does not have HORNET motors in stock, we will ship direct from factory within 24 hours of receipt of order.

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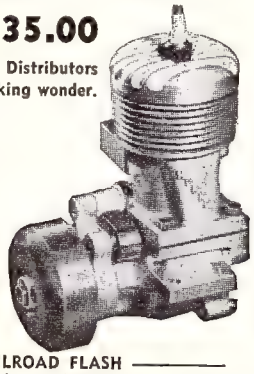

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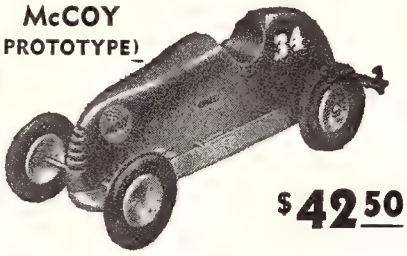

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and proceeds were turned back into the treasury rather than give prizes with it. *After all this construction work, the treasury is slightly on the flat side.* The Hobby House of Denver donated to the Club a McCoy Streamliner to be raffled off and half the tickets were sold the first day. The Duro-Matic Products Co. also donated a Hot Rod, which will be raffled off at a later date. The high light of the day came when Lee Zeigler brought out a new Dooling engine in a Dooling Proto and turned up over 97 mph with it.

Results of the opening race follow:

PROTO (¼-Mile)	MPH
L. Zeigler, Dooling-Dooling	97.82
S. Steinberg, Own-McCoy	89.64
L. Zeigler, Own-Hornet	89.19
R. Worthen, Own-Hornet	87.71
G. Lichtenwalter, Dooling-Hornet	87.63
R. Worthen, Dooling-Hornet	86.78
J. Warkins, Dooling-Hornet	84.19
F. Burrows, Dooling-McCoy	84.11
D. Kargo, Dooling-McCoy	82.72
E. Swain, Papina-Hornet	82.41
K. Stewart, Dooling-Hornet	82.19
J. Fitting, Dooling-Hornet	78.67
W. Norberg, Dooling-McCoy	76.92
W. Zarlengo, Dooling-Hornet	75.63
C. Kline, Dooling-Hornet	75.25
E. Swain, Dooling-Hornet	71.71
W. Jimerson, Dooling-Hornet	63.64
H. McHugh, Own-Hornet	60.20

FRONT SPUR GEAR (¼-Mile)	
F. Rees, McCoy-Hornet	92.11
H. Salmon, McCoy-McCoy	86.53
F. Mercure, Mathews-McCoy	86.12

REAR SPUR GEAR (¼-Mile)	
R. Benson, Dooling-Hornet	82.79
H. Yaeger, Dooling-Cyclone	72.93
J. Warkins, Dooling-McCoy	72.58

PROTO (1-Mile)	
L. Zeigler, Dooling-Dooling	94.71
S. Steinberg, Own-McCoy	90.31
L. Zeigler, Own-Hornet	87.42
R. Worthen, Dooling-Hornet	85.98
G. Lichtenwalter, Dooling-Hornet	85.91
R. Worthen, Own-Hornet	85.12
W. Norberg, Dooling-McCoy	84.34
J. Warkins, Dooling-Hornet	83.83
D. Kargo, Dooling-McCoy	82.64
F. Burrows, Dooling-McCoy	82.22

FRONT SPUR GEAR (1-Mile)	
H. Salmon, McCoy-McCoy	90.61
F. Mercure, Mathews-McCoy	80.30
F. Rees, McCoy-Hornet	70.13

REAR SPUR GEAR (1-Mile)	
J. Warkins, Dooling-McCoy	75.45
H. Yaeger, Dooling-Cyclone	71.32

Anyone wishing further information, may contact Secretary Dick Worthen, 2266 Jasmine St., Denver, Colo.

ARMCA SANCTIONED MEETS FOR 1947 SEASON

Sept. 1	Harold Loose Memorial Race, Long Island, N. Y.
Aug. 31, Sept. 1	Salina, Kansas
Sept. 7	Boston, Mass.
Sept. 7	Lafayette, Indiana (All-Proto)
Sept. 7	Waukegan, Ill.
Sept. 14	Columbus, Ohio
Sept. 14	Peoria, Illinois
Sept. 20 & 21	Atlanta, Georgia (Southern Championships)
Sept. 21	Detroit, Mich.
Sept. 28	Bakersfield, California
Sept. 28	Forest City, Cleveland, Ohio
Sept. 28	New Castle, Indiana
Sept. 28	Washington, D. C.
Oct. 5	Detroit, Mich.
Oct. 11, 12	San Francisco, California
Oct. 19	Long Island, N. Y.
Nov. 11	Monroe, La. (2nd Annual Classic)

Above dates and locations are subject to change by request of Clubs concerned.

YOUR RAIL CAR

By BILL DECKER

WITH the ever increasing interest in Rail Racing, I thought it might be worth the time to jot down a few things for you newcomers in this branch of the hobby. Rail Racing is quite different from Cable Racing, not only in construction of the car but also in the manner in which it performs. There are several points that the rail racer must strive to get out of his car in the way of performance in order to stick with the top boys.

In my six years of rail racing experience, I have learned that the car with a terrific getaway is almost certain to win. This cannot be obtained with 4" tires as so many of the manufacturers are advising. I haven't seen a rail race won on 4" tires of any kind for so many years that I cannot recall when it *was* done. Take a 3⅝" or 3¾" diameter drive tire for use on those record runs. Of course, your car must have a good top speed too, along with that fast getaway. A year or so ago, I ran rings around a car that was always qualified two to four miles an hour faster than mine. That fast getaway was just too much for him to make up with his superior speed. Once in awhile he would beat me out in a mile race, but not very often. So you see that it is a definite advantage! In order to get that fast getaway, you must have that car timed perfectly and your motor lined up to the Nth degree. No binds anyplace.

Adapters . . . ah, there's a speed killer if you haven't got them just right. This will be covered thoroughly at a later date, and I'll tell you just how to work out your own correctly. It's not a bit hard once you have the right dope. One more point before I go on. . . . Be careful of buying adapter hook-ups that do not have positive means of locking the adapter studs in, either by jam nuts or set screws on each and every stud! If you don't watch this detail, you'll wind up with a mashed car and maybe three other fellows' cars along with it.

Gravity feed tanks seem to be the speed getter as far as gas tanks are concerned. If you go to this type of tank, you will have to use a shut-off valve to stop the flow of fuel when your car is standing still.

These are just a few of the highlights of a rail car requirements. I have promised your Editor to get down to more detail on some of these things. So next month, I intend to give you all the dope on my adapter hook-up, together with pictures and sketches. Maybe even an entire series of articles on my new Rail Car that I am now building. How'd you like that? Why not drop a line to Bob Thompson, c/o the Craftsman, and let him know.

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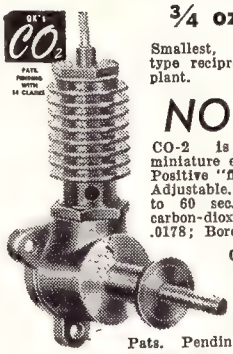

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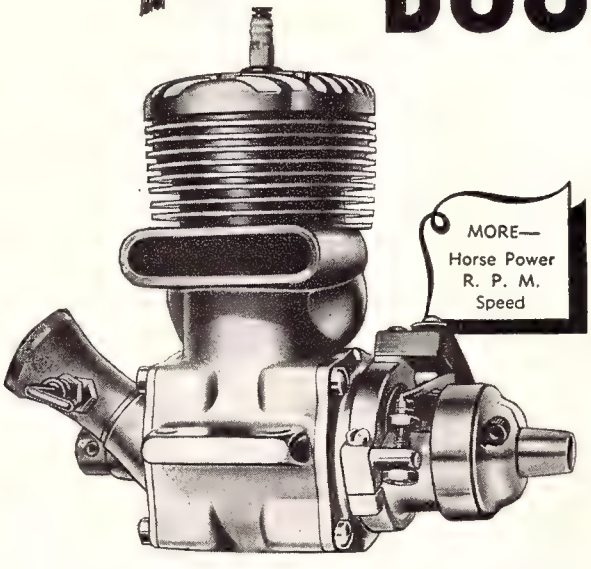

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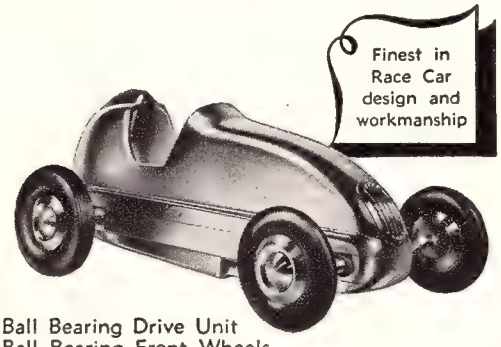

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MIDGETS FLY LOW AT NEW CASTLE

THE New Castle MRCA held their first sanctioned race on July 27th in Memorial Park, just outside the city of New Castle, Ind. Fifty-six cars entered the field, less than anticipated due to rain which fell early in the morning. High speed in Spur was turned in by Frank Mathews of Rockford, Ill., knocking out 118.27 MPH for a track record. K. C. Smith of St. Petersburg, Fla., took over in the proto division with 107.52 MPH. Many beautiful trophies were awarded, most of which were donated by various business and fraternal organizations of the city. Results follow:

PROTO

	MPH
K. C. Smith, Pacemaker—Hornet	107.52
Joe Gaebler, Pacemaker—Hornet	104.77
Gus Myer, Own—Hornet	104.04
Mrs. P. Smith, Pacemaker—Hornet	103.56
F. Mathews, Own—Mathews	103.21
P. Wilson, Pacemaker—Hornet	102.97
G. Francis, Fox—Hornet	102.85
G. Mathews, Pacemaker—Own	102.38
P. Sniderman, Fox—Hornet	101.12
R. Stevens, Pacemaker—Hornet	100.44
Dr. Fleener, Pacemaker—Hornet	100.22
L. E. Wallace, Pacemaker—Hornet	100.22
Joe Olender, Pacemaker—Hornet	100.00
Jack Ray, Pacemaker—Hornet	100.00
J. Paynter, Pacemaker—Hornet	99.88
D. Wilson, Pacemaker—Hornet	98.68
J. Wetzel, Own—Hornet	95.84
D. Neff, Invader—Hornet	93.36
D. Lassen, Pacemaker—Hornet	93.26
S. Ray, Pacemaker—Hornet	92.78
C. Paynter, Pacemaker—Hornet	92.30
J. Wilson, Invader—McCoy	90.90
B. Stohler, Pacemaker—Hornet	90.54

SPUR GEAR

F. Mathews, Coffield—Own	118.27
G. Mathews, Own—Coffield	117.80
J. Wetzel, McCoy—McCoy	116.58
Dr. Fleener, Borden—Hornet	115.38
K. C. Smith, Mathews—Hornet	111.11
B. Shenk, McCoy—McCoy	109.75
J. Wilson, McCoy—Hornet	109.75
S. Ray, Coffield—Coffield	108.04
P. Smith, McCoy—Hornet	105.88
L. Van Camp, McCoy—McCoy	104.52
H. Porter, Mathews—McCoy	99.44
H. Hargrave, Mathews—Hornet	97.08
J. Ray, Coffield—Hornet	95.94
F. Beeler, McCoy—Hornet	94.33
B. Liston, McCoy—Hornet	93.65

BALTIMORE OPENS NEW TRACK

THE Baltimore M. R. C. A. originally organized in 1940 and held races every Sunday on the Club's 1/16 mile track. But with the war and many members joining the service, the Club was disbanded. Since July, 1946, however, most of the original members have gotten together and reorganized. The old track being out of repair, the boys have been racing regularly with the Washington Club at their track.

Recently, the Baltimore crew acquired a tract of land and constructed a 1/24 mile concrete track, plus several U-control circles, located at 7307 Liberty Road in Baltimore. The track itself is a 3-ft. ribbon of steel reinforced concrete, lapped to perfect flatness. They have an 18" high cyclone fence crash wall, with a 5-ft. cyclone fence set back from the track to protect the spectators. Pit space with benches will accommodate 25 men. A timer shack has been erected to house their equipment as well as officials at their races.

Anyone interested in joining the Club, contact S. L. Tenberg, Club Secretary, at 5274 Park Heights Ave., or phone Liberty 9636.

THRILLS GALORE AT JAX

(*Continued from page 35*)

fine job done by Mr. Charles H. Thorton of the Jacksonville Club who acted as chief timer. Results follow:

PROTO

	MPH
1st—C. Drennon, Atlanta, Ga.	105.88
2nd—J. Coppage, Atlanta, Ga.	105.88
3rd—W. H. Arnold, Atlanta, Ga.	101.12
4th—Ed. Stone, Eustis, Fla.	98.90
5th—C. H. Horn, Jacksonville	98.90
6th—F. Ironmonger, Jacksonville	98.90
7th—C. E. Simmons, Atlanta, Ga.	96.26

SPUR GEAR

1st—J. Coppage, Atlanta, Ga.	109.76
2nd—W. H. Arnold, Atlanta, Ga.	104.05
3rd—Alex Farley, Daytona Beach, Fla.	98.90
4th—W. Geiger, Jacksonville	98.36
5th—L. G. Diggett, Daytona Beach, Fla.	81.08
6th—C. Drennon, Atlanta, Ga.	81.08
7th—G. T. Hubbard, Jax Navy	80.50

PRESENT SPEED RECORDS

THIS is your standing box score representing AMRCA speed records as of August 15, 1947. These are the present existing records as reported to this office, showing highest speeds established on both cable and rail tracks, type car and engine used, together with location and date of established record:

1/16 MILE CABLE TRACK

SPUR (¼ Mile): Dick McCoy, San Francisco, July 7, 1946—116.73 MPH (McCoy Car, McCoy Engine)
PROTO (¼ Mile): Howard Lee, San Francisco, July 7, 1946—108.95 MPH (Own Design Car, Hornet Engine)
STREAMLINE (¼ Mile): Jim Gilmore, San Francisco, July 7, 1946—103.32 MPH (Special, Hornet Engine)

1/24th MILE CABLE TRACK

SPUR* (¼ Mile): W. Thomas, Jr., Eustis, Feb. 22, 1947—120.32 MPH (Own Design Car, Hornet Engine)
SPUR (½ Mile): Warren Borden, Waukegan, July 6, 1947—120.89 MPH (V-Car, Hornet Engine)
SPUR (1 Mile): J. Crossan, Detroit, Aug. 2, 1946—113.38 MPH (V-Car, Hornet Engine)
PROTO (¼ Mile): Dale Martell, Waukegan, Ill., Sept. 1, 1946—113.21 MPH (Own Design Car, Hornet Engine)
PROTO (½ Mile): J. Brake, Waukegan, Ill., July 6, 1947—110.15 MPH (Own Design Car, Hornet Engine)
PROTO (1 Mile): Howard Lee, Detroit, Aug. 2, 1946—109.02 MPH (Own Design Car, Hornet Engine)
STREAMLINER (¼ Mile): Jim Gilmore, Detroit, Aug. 3, 1946—104.98 MPH (Special, Hornet Engine)
STREAMLINER (½ Mile): Jim Gilmore, Detroit, Aug. 1, 1946—102.50 MPH (Special, Hornet Engine)
STREAMLINER (1 Mile): Jim Gilmore, Detroit, Aug. 2, 1946—100.44 MPH (Special, Hornet Engine)

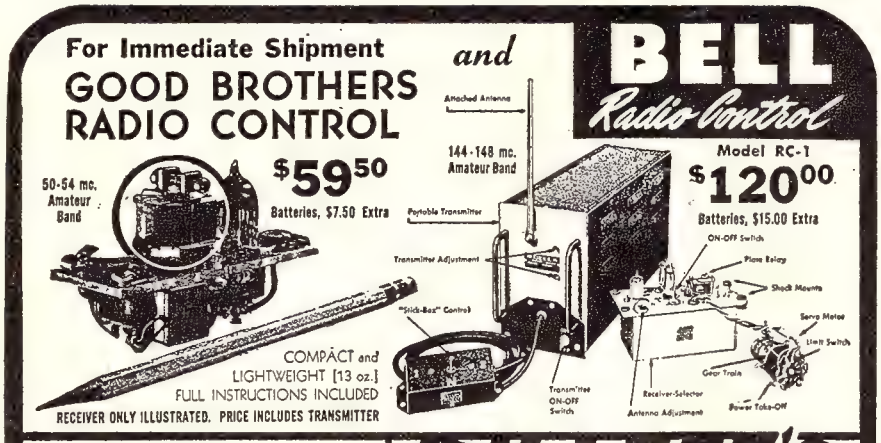
1/16th MILE RAIL TRACK

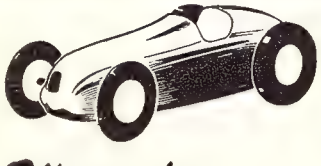
STREAMLINE: W. Weller, Chicago, Aug. 25, 1946—79.30 MPH (Hornet Engine Used)
PROTO: Elmer Wheeler, Chicago, Aug. 9, 1947—81.30 MPH (McCoy Special—McCoy Engine)

1/12th MILE RAIL TRACK

PROTO (¼ Mile): Dick McCoy, Fresno, Calif., July 6, 1947—95.13 MPH (Own Car, McCoy Engine)

** Warren Borden turned the quarter mile in 121.46 MPH at Waukegan, Ill., July 6, 1947, yet to be verified by AMRCA.*





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Build a Steam Shovel ..... Nov. '46
N & W Hopper Car ..... Nov. '46
Roundhouse ..... Mar. '47

O GAUGE

Motorized Wrecking Crane ..... Sept. '44
Mother Hubbard 4-4-2 ..... July '46
Suburban Double Ender ..... Sept. '46
Worm Drives ..... Nov. '46
Ten-Wheeler Loco ..... Feb. '47

OO GAUGE

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U.P. 800 Class Loco. ..... Dec. '45
Erie Caboose ..... Jan. '46
C. & N.W. Pacific 4-6-2 ..... Feb. '46
B. & O. Mallets ..... June '46
Penn E-6 Atlantic ..... Aug. '46
Loco Traveling Crane (all gauge) ..... Oct. '46

RAILROAD MISCELLANEOUS

Building Model Locomotives ..... Jan., Feb. '45
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Bridge Warnings ..... Nov '45
HO Trestle ..... Dec. '45
Simple Crossing Gate ..... Dec. '45
Standard Brick Signal Tower ..... Jan. '46
How to Build Tunnels ..... Feb. '46
Bridges ..... Mar. '46
HO Coal Tipple ..... Apr. '46
A Terminal Throat ..... May '46
A Big Interurban Layout ..... June '46
V & T Passenger Station ..... July '46
Track & Scenery Foundation ..... Aug. '46
Three-Way Switch ..... Aug. 46
A Simple Interlocking Plant ..... Sept., Oct. '46
B. & O. Coal Tower ..... Sept. '46
Speaking of Water Falls ..... Oct. '46
Does Your Layout Have a Church? ..... Oct. '46
Two Rail Signals ..... Dec. '46
Where to Put your Feeders ..... Dec. '46
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Interlocking Without Relays ..... May '47

TROLLEYS

Model Cattle Car (Prototype Dimensions) ..... July '44
Shooting Trouble on HO Motor Trucks ..... Oct. '44
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Modeling Traction Interurbans ..... Nov. '46
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Narrow Gauge Coaches ..... Apr. '47

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Tin-Types "Trued to Life" ..... June '45
Along the Tinplate Track ..... Monthly Feature

AIRPLANES

"Tiger Meat" Class C Guide Liner (Millet & DeBolt) ..... Oct. '45
Dizzy "B", U Control (Greene) ..... Nov. '45
"Butch", Class C Guide Liner (DeBolt) ..... Dec. '45
"Moldy Molecule", Class B & C Guide Liner (DeBolt & Thomasian) ..... Jan. '46
"Thunderwin", U Control (McElwee) ..... May '46
The "Atomic", U Control (Shulman) ..... June '46
"Pirate", Control Liner (McGovern) ..... Sept. '46
Your Engines (Class A & B Survey) ..... Aug. 46
Your Engines (Class C Survey) ..... Sept. '46
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Home-Made Telephone ..... July, Aug. '44
Battery Charging Hints ..... Aug. '44
Switch Motors from Doorbells ..... Oct '44
Polarity Indicator ..... Oct. 44
A. C. Power Supply ..... Nov. '44
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O Gauge Motors ..... Oct. thru Dec. '45
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Train Control Rheostat ..... June '46
Lighting Your Trains & Buildings ..... May '46
Electricity, "What is it?" ..... Jan. '47

RACE CARS

Molding Car Bodies ..... July '44
Getting Ready for Racing ..... Mar. '45
Building a Model Race Car ..... May thru. Nov. '45
How to Get More Speed ..... May '45
Trouble Shooting ..... Feb. '46
What Type Racing Car? ..... Mar. '46
Test Car #1 ..... Apr. '46
Test Car #2 ..... July '46
Rail Track Construction ..... May '46
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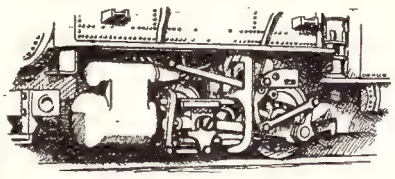

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LEHIGH VALLEY MIKADO

(*Continued from page 12*)

velopment. A heavy walled brass pipe works fine; O.D. is 1 29/32" and I.D. 1 39/64". When cutting to length, allow for the chuck and parting tool, as well as ¼" for joining the firebox. Leave full diameter inside the cab to form a shoulder for spacing the front and back cab sheets when soldering. Turn remainder of the barrel to 1 23/32" diameter and the ¼" extension as firebox turn to take thickness of wrapper sheet which should be 1/32". The remainder of the boiler, firebox, cab and domes should go along as with previous models except for the sloping back head. When cutting the wrapper sheet, cut to full length at the bottom. After soldering the back head in place, trim off the excess of wrapper sheet.

The location of the headlight as shown in the drawing was for the old oil light in its original position. Photos taken at various dates will reveal the changes which were made from time to time.

The tender drawing gives complete dimensions and construction methods follow those used in previous articles. Use ⅛" radii at the corners. There are good castings now available for cast steps. Tender trucks are also available and are known to the trade as "Baldwin trucks" for Diesels.

When construction is complete, paint the entire engine and tender a dull black. Decals are available in proper size for lettering and numbering (*use a box car set*). The name LEHIGH VALLEY goes on either side of the tender. Large numbers (*from reporting mark set*) go on the cab sides and the small (*for car ends*) go on the rear of the tender and the number plate.

The prototype of this model was used in main line service, but in later years was used in local freight service and on mine runs. Some served their last days in the yard.

MICRO TRAINS

(*Continued from page 14*)

construction, and these items follow with the kit. Micro trains are attractive, as the first engine duplicates the prototype of the Hudson 4-6-4, one of the world's famous engines. They operate, of course, on two-rail, with flanges sufficiently high to prevent derailing. (*The flanges do not spoil the appearance, either!*) A 12-volt permag motor, drawing very little current, is mounted in the tender. The Pittman motor can be easily used with very little change. Track gauge is 10.0 mm, slightly overscale. Driving wheels on the locomotive are 13.7 mm dia., with car wheels also to exact scale diameter. Wheel flange is .75 mm high and .75 mm thick. Minimum switch used is #6 and minimum curve radius 12", although you make them larger to prevent unrealistic operating with too much overhang.

Manufacturing follows the most modern principles, most parts being pressure die cast in type metal and zinc alloys. Lightweight cars are made of injection moulded tenite parts, moulded in my own constructed injection moulding machine of rather high capacity. Import of American machines was impossible because of the war.

Micro Trains are fitted with automatic couplers and uncouple with transparent plastic ramps placed in the center of the track. Special rail profile in brass is used and mounted on tiestrips the usual way.

ALONG THE TINPLATE TRACK

(*Continued from page 25*)

pops up in the boiler front center every so often from the No. 12 of 1911 to the No. 28 of 1930, and while some of the earliest models do have a distinctively square headlight, the square headlight reappears from time to time when least expected in the locomotives of the entire period.

Indeed, one can make what he likes of these variations in A. F. wind-up locos. Surprisingly, in a 1922 folder, an engine designated as a "No. 2" catches the eye. It has the same casting as the first A. F. loco pictured here! But perhaps this simply represents the use of an old cut to replace one that was worn out; the previous folder illustrates the same set with a more modern locomotive. Or were castings still being taken

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from these pioneer patterns or their duplicates, as late as 1922? Old cuts showing the No. 12 loco, but designated in the text as the No. 13, were used into the 1920's.

Of course, there were also the stamped metal A. F. "Hummer Line" locomotives which appeared around 1915 to fill the need for a low priced train line. There were five types of these, the earliest being the Nos. 50, 52 & 62.

Obviously, there remain gaps and questionable points in this story of the early American Flyer clockwork locomotives. Perhaps some points will never be satisfactorily cleared up. On the other hand, it is a matter which can be greatly affected by the discovery of a hitherto unknown catalog or two, and we have no way of knowing now just how much further information may become available as time passes. It is just these unanswered problems that make the study of tinplate trains such a continuing fascinating, never ending quest. After all, if *all* the answers were known, much of the zest would go out of the hobby!

B & M ATLANTIC

(*Continued from page 20*)

mit the rear end of the motor to be moved up or down for proper meshing of the gears. Make an effort to obtain a set of gears approximately the same as shown on the drawing, or you may have to mount the motor at a steeper angle. The worm is held on the motor shaft with a set screw.

The reverse switch on my model is of the drum type, mounted on the rear end of the loco frame directly under the cab. This makes it easy to wire the motor to it. The rod which turns the switch protrudes from under the cab and is easily accessible. This type reverse switch is available in most hobby stores, and can be soldered to the loco frame or fastened with screws.

Next month we will construct the boiler and cab and complete the locomotive itself.

YOUR AUTHOR'S WORKSHOP

ALL of us see the results of our many authors' handiwork but few of us are fortunate enough to be personally acquainted with these men and see where they spend their spare time, turning out locomotives, rolling stock, etc. But after all, they are regular guys like you and me, each one having some spot set aside for a workshop, some with elaborate setups and others working with the barest necessities. But let's take a peek at the inside of these shops and find out what's cooking.

One of your favorite authors, John Barkley of North Hollywood, Calif., shown in his combination workshop-train room.

One of our better known authors is John R. Barkley, a real congenial fellow. John hails from North Hollywood, California, where he has residence at 5845 Lemp Ave. You all know his work, for he has turned out some pretty fine pieces of rolling stock and locomotives, the Low-wheeled Pacific and his Consolidation among them, all of which have appeared in M.C.

And now for a quick gander at his workshop and some of his equipment. According to John, a considerable portion of his train room was sacrificed to make room for a good work bench and place to store tools, material, etc., for he's a

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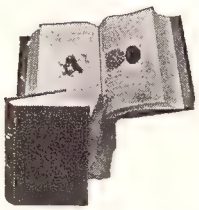

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fella that really likes to build things up from scratch and can't content himself with merely assembling kits.

His work bench is 24" wide and 12' long, covered with tempered Masonite. Four drawers are built in the front. At one end he has a sturdy vise and to the rear are two burners for a hot plate where castings are made. John also molds 38 and 45 calibre bullets for he likes to indulge in another of his hobbies, which is pistol shooting. Incidentally, he's a member of the Los Angeles Police Force and on their pistol team (*a good man to know, fellas!*).

At the other end of his bench is a Delta drill press, also a grinder and motor. The shop is completely wired with outlets all along the bench for power tools. Other equipment consists of a motor tool with complete attachments, several electric soldering irons plus a heavy gas-heated job, hack saws, jeweler's saw, planes, chisels, files, alcohol torch, hand drill, squares, level, hammers and other odds and ends which accumulate.

According to Barkley, a model maker's lathe would certainly be a useful addition, but so far he hasn't made the grade. "I've gotten along very well without one so far; the only time I was stuck was in turning my own wheels for the Low-wheeled Pacific and then I borrowed my brother Bill's dandy South Bend for an evening." Other small turnings he is able to make on the drill press, using files for cutting tools, a la Thornburgh.

John has never regretted the use of his workshop space as it makes more pleasant working, tools are close at hand and taking all into consideration it beats the garage where work was previously done. Then, too, his shop and train room has heat and is insulated with Celotex wallboard on walls and ceiling, keeping it clean and well lighted. No matter how handy his saw is, he keeps it in the garage for several reasons, number one being the menace of sawdust getting on the rails of his layout!

R.R. CLUB NEWS

(Continued from page 5)

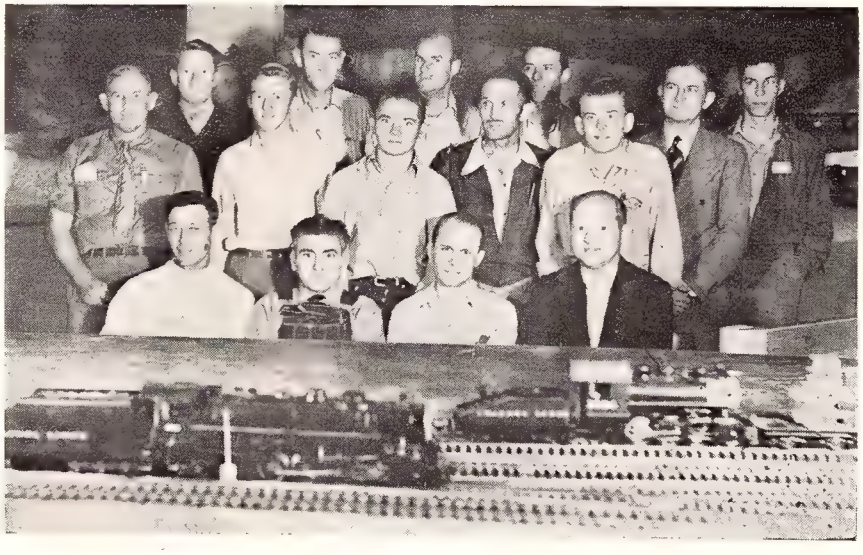
stressed the importance of mutual understanding between model railroaders and their prototype brothers of the big rails, when he presented the marker lights to Mr. Clark H. Pool, Jr., president of the Society.

"These marker lights are an expression of good wishes from the New Haven Railroad to the Society," Mr. Hull said, "for the Society's continued success in the furtherment of model railroading in its new quarters in the Lackawanna Terminal."

Following the ceremonies, two sound motion pictures and one slide film presentation were shown depicting the excellent passenger and freight facilities and service of the New Haven. Mr. Leslie H. Tyler, Public Relations Director of the New Haven (*and an honest-to-goodness railfan himself*) introduced each of the films.

In addition to the members of the New York Society, members of the Elizabeth (N. J.) Society of Model Engineers; Hartford (Conn.) Society of Model Railway Engineers; Lakewood (N. J.) Model Railroad Club; New Haven Society of Model Engineers; Long Island (Astoria) Model Railroad Association; and Central Jersey (Westfield) Model Railroad Association were on hand to make it a truly successful meeting.

SANTA BARBARA, CALIF. The Channel Railroad Club dusted off the cobwebs of their "Welcome Home" mat for Vernon P. (*Tex*) Guess, who just recently returned to his old home town after a long trek at Albuquerque. Their regular meeting night seemed more like old times, with a real bull session going strong, Tex being right smack in the middle of it. No time was lost in putting the old magnate right to work either, for his contract proved to be the lowest bid

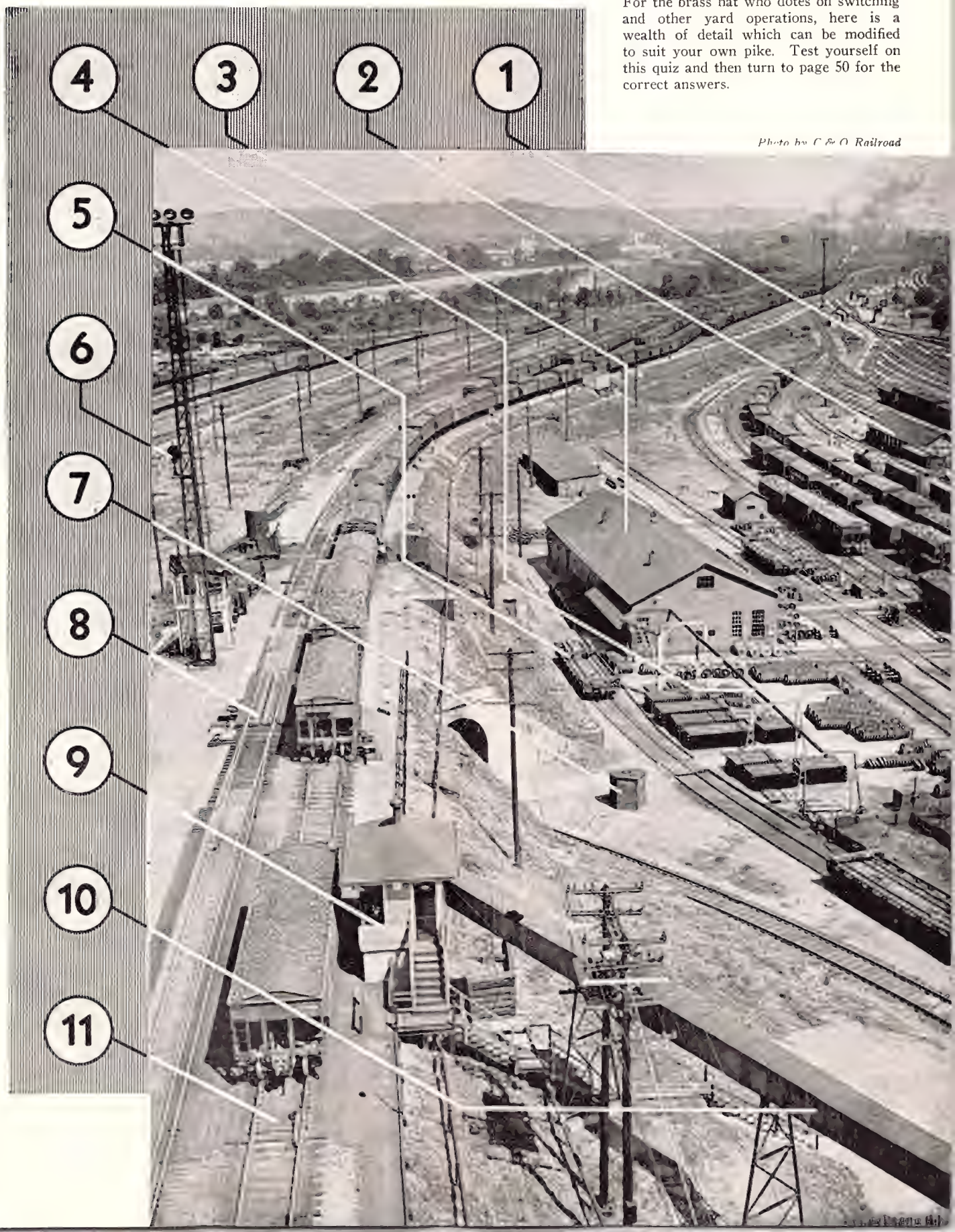


Meet the members of the Channel R. R. Club of Santa Barbara, Calif. Back row left—W. Stone, A. G. Goldschmidt, V. P. Guess, B. W. Malis, Dr. J. W. Newton, J. McCaddin. Center left—L. A. Bartholomew, T. Cheesman, N. Hoge, C. Plopper, R. Ericson. Seated left—A. Merrifield, H. Lehman, E. W. Covington, D. Jackson. Photo does not include nine non-resident members.

PROTOTYPE QUIZ

YOUR quiz this month serves a dual purpose. In addition to testing your knowledge, here is an ideal opportunity to pattern your own model yard true to actual prototype practice as followed out by one of the greatest American railroads. Photo shows "The Hump" at Russell, Ky., C&O's westbound classification yard. For the brass hat who dotes on switching and other yard operations, here is a wealth of detail which can be modified to suit your own pike. Test yourself on this quiz and then turn to page 50 for the correct answers.

Photo by C & O Railroad



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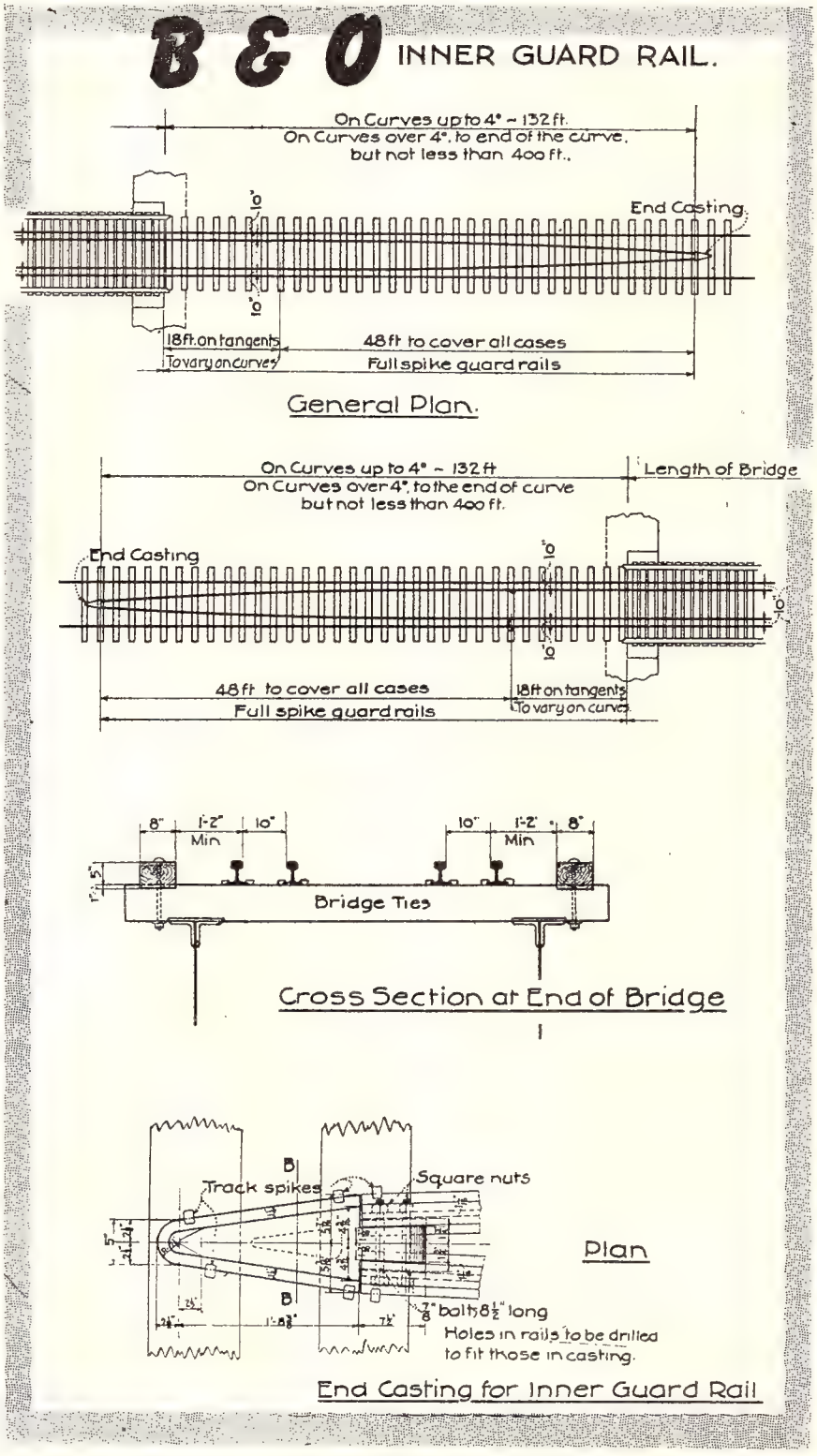
for construction work on the new extension from Edison to the new town of Indian Wells.

Tex is back in the old groove already, having just been elected to the Board of Directors, Pacific Coast Region of NMRA.

PELHAM MANOR, N. Y. The Westchester Model Club will hold its annual exhibition of model railroading at the Pelham Manor, N. Y., station of the New Haven R. R. on the first three weekends of November. Hours will be 7:30 to 10:00 p.m. on Fridays, and 2:00 p.m. to 10:00 p.m. on Saturdays and Sundays. Dates of the exhibition will be October 31, November 1-2, November 7-8-9, November 14-15-16.

The exhibition this year, the same as last, will be for the benefit of the Tribune Fresh Air Fund with which residents of Westchester County are most familiar and have contributed generously over the years.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To vary on curves
8"
1'-2" Min
10"
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Cross Section at End of Bridge
Track spikes
Square nuts
Plan
7/8" bolts 8 1/2" long
Holes in rails to be drilled to fit those in casting.
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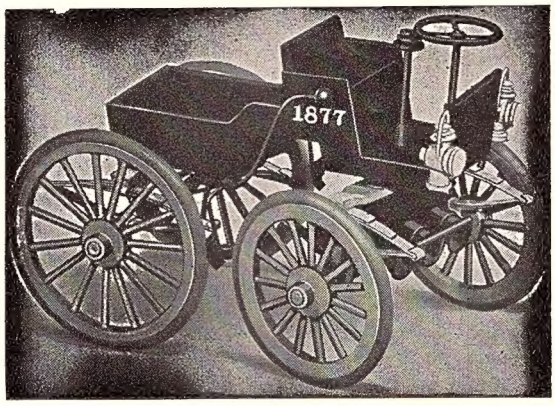

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BEGINNERS' STEAM ENGINE

(*Continued from page 31*)

as a safety valve to the boiler is reduced. The lower end of the valve is filed to a rectangle section and drilled for a pin. Lap the valve to seat with Bon Ami and water mixed to a paste. This dissolves with water. The cylinder head is turned from steel, the boss turned thumb press fit, but leave it to last as the length of the boss can be made to suit the piston clearance at top center which is 1/16" or less.

We are now ready for the assembly. Tin the cylinder at the boss and the outside of the guides, also inside of the frame. Submerge the base in a dish of water to prevent the solder melting here and place the cylinder in position. Heat with a torch until the solder runs and set valve face square to the shaft. Now with an iron, run a solder fillet down the side of each guide bar. Rinse off all flux and scrape all solder smooth and you'll end up with a one piece casting—cylinder, frame and base.

Now slip the crankshaft, eccentric and strap in place. Drop in the piston, poke your 1/16" drill in the port and hold the piston up to it. Now place crank on top dead center and set your dividers from wrist pin to crankpin centers. Make up the connecting rod to these centers. It is made of sheet steel about hacksaw thickness and polished. The little bottom end bush is optional, but its looks cannot be denied.

Make the little fork for the top end of the eccentric rod. Now place the valve in position. Screw a mouthpiece of tube into the exhaust port. Blow in this and move valve upward until you can just hear some air starting through the cylinder port. Now move the valve 1/16" higher and placing eccentric on the center, make up the eccentric rod to length. Solder in the fork and strap with valve and eccentric in the above positions. Now turn the eccentric around until (*on blowing in the steam pipe with the crank on center*) air just starts entering the cylinder port. The valve is now set. Fit the cylinder head coating outside of boss with shellac. When the flywheel is fastened on (*with a drop of solder if necessary*) the engine can be run.

To finish off the model, the various parts were given a colorful paint job. The base and frame were green, inside of the frame and flywheel were red, cylinder jacket portion a deep blue and all other parts polished.

QUIZ ANSWERS

(*From page 47*)

1. Classification Yard
2. Yard Office
3. Car Shop
4. Wheel Carrier
5. Wheel Gondola (*note tracks in car*)
6. Yard Signal
7. Fire Hose Shed
8. Car Retarder
9. Scale House
10. Catwalk or Ramp
11. Scale Platform

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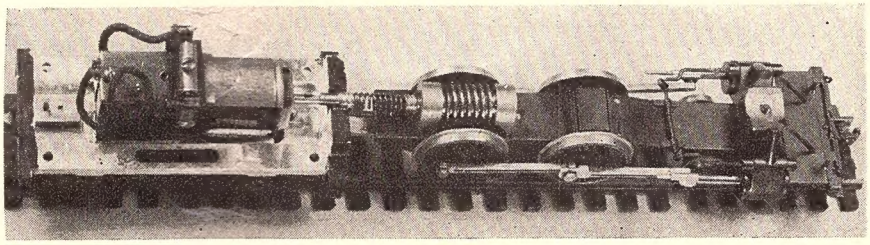

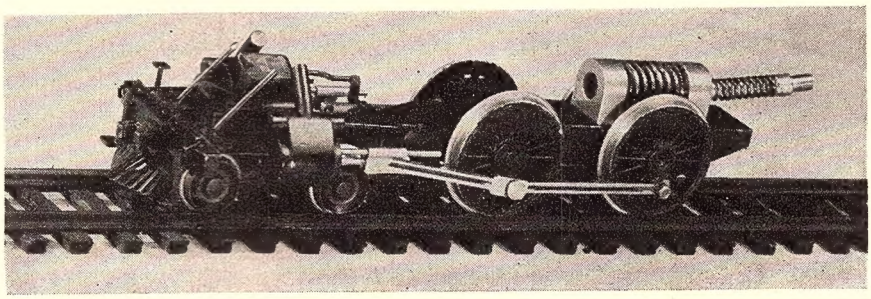

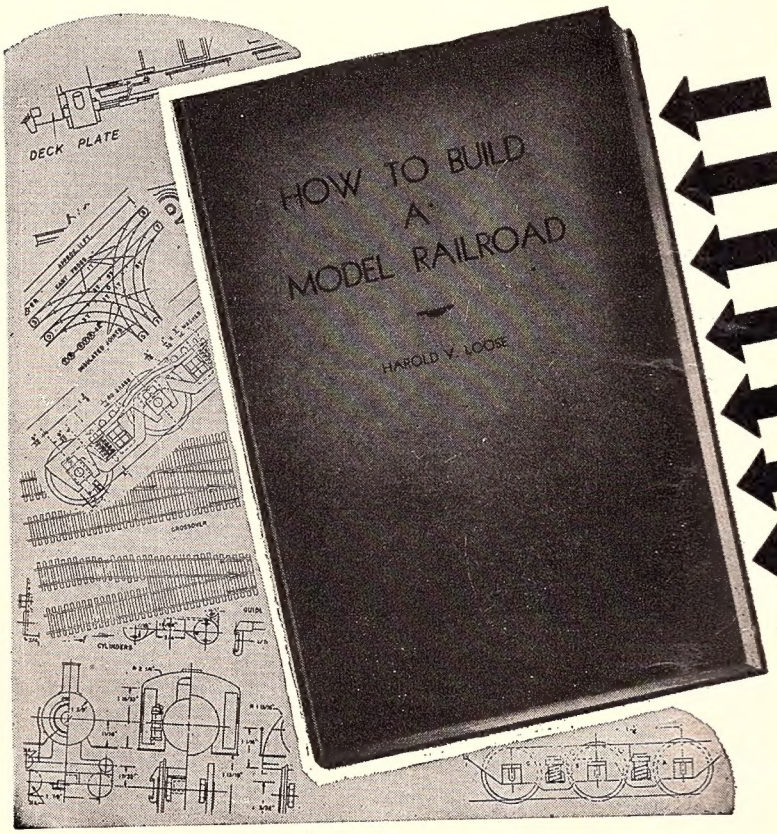

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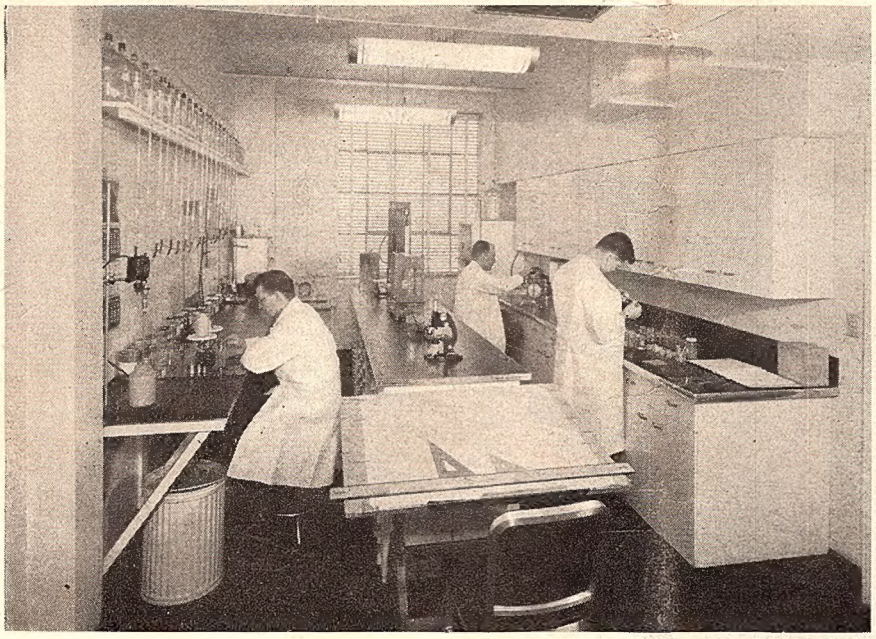

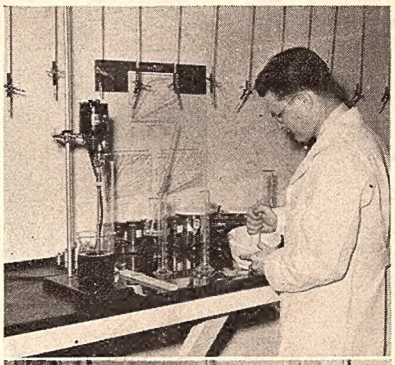

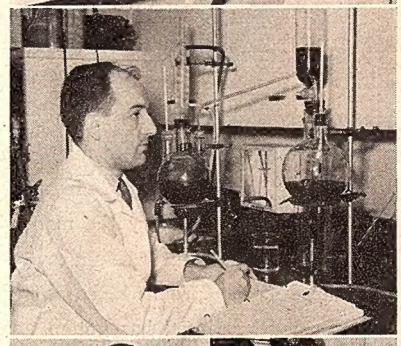

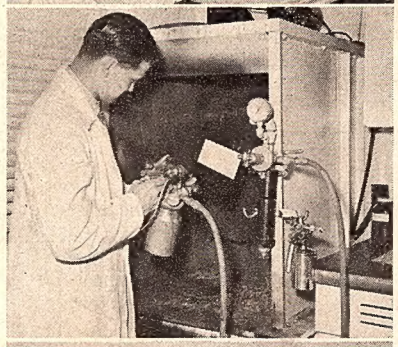

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